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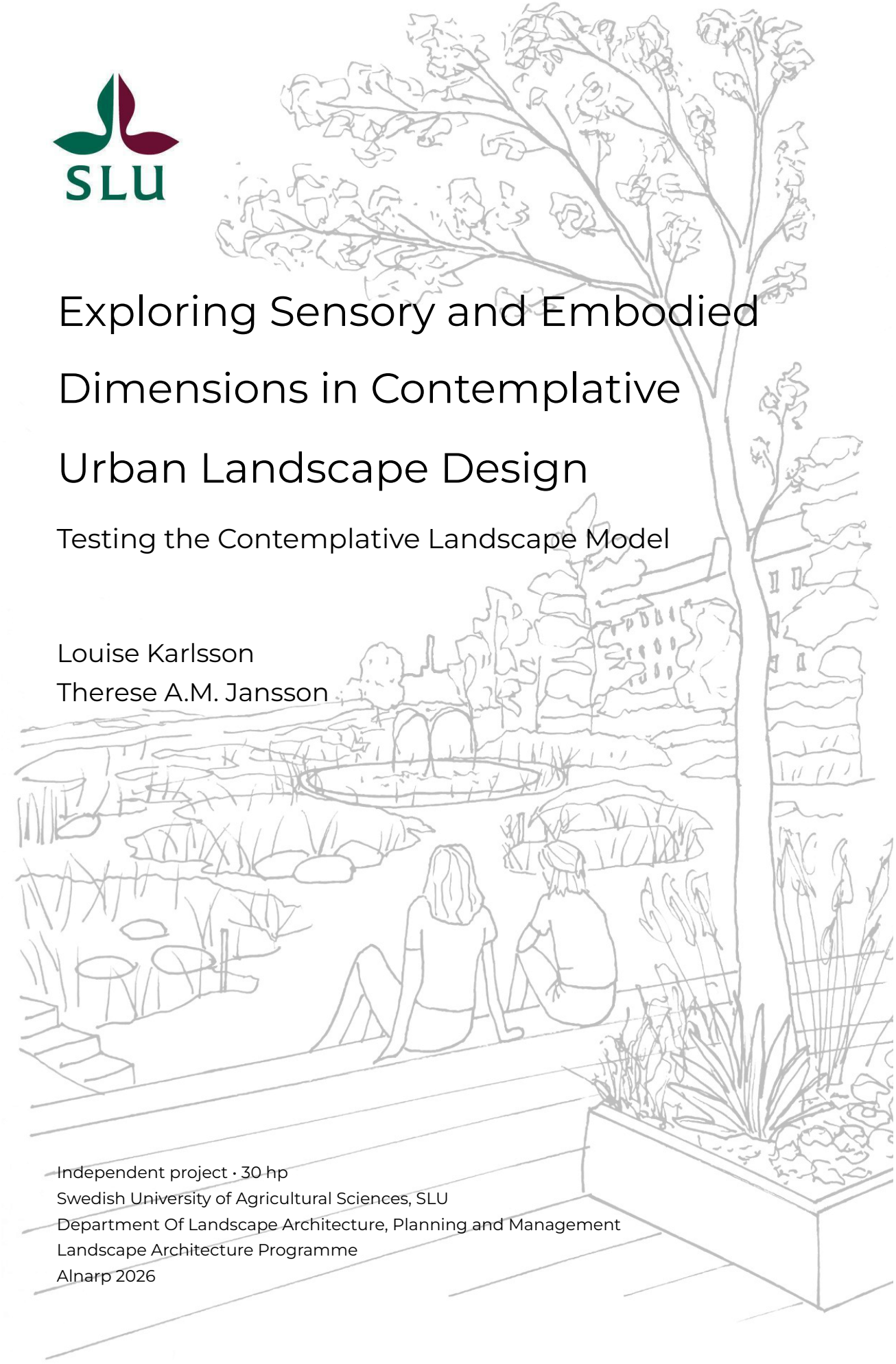

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Exploring Sensory and Embodied Dimensions in Contemplative Urban Landscape Design.

Testing the Contemplative Landscape Model (CLM)

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Swedish Abstract

I dagens urbana miljöer, präglade av ständig stimulans och högt tempo, blir möjligheterna till paus, reflektion och mental återhämtning allt mer begränsade. Denna studie undersöker vilka kvaliteter som gör att ett landskap upplevs som kontemplativt och hur dessa kvaliteter kan identifieras och utvärderas inom landskapsarkitektur.

Fokus ligger på att analysera och granska Contemplative Landscape Model (CLM) som ett verktyg i praktisk tillämpning. Vidare studeras två kontrasterande trädgårdar, Generalife i Granada och Calouste Gulbenkian i Lissabon, genom åtta utvalda landskapsvyer. Dessa platser utvärderas både genom fotografier och platsbesök för att undersöka hur olika former av exponering påverkar upplevelsen av kontemplativa kvaliteter. Studien analyserar även hur sensoriska faktorer, såsom ljud, rörelse och atmosfär, samt variation mellan bedömare påverkar resultaten.

Resultaten indikerar att CLM är ett användbart verktyg för att identifiera rumsliga och visuella egenskaper kopplade till kontemplativ potential. Samtidigt framträdde en tydlig skillnad mellan denna potential och hur platserna faktiskt upplevdes i verkligheten. Sensoriska och kontextuella faktorer påverkade upplevelsen av platserna i hög grad, vilket inte fångades fullt ut av modellen.

Sammantaget visar resultaten att kontemplativa landskap består av mer än spatiala och visuella egenskaper, istället skapas kontemplativa platser genom en kombination av platsens utformning och platsbundna förhållanden. Kontemplativa upplevelser formas till stor del av hur platsen används och påverkas av sin omgivning. Att skapa miljöer som stödjer kontemplation handlar därför inte bara om spatiala kvaliteter, utan också om att minska sensoriska och kontextuella störningar som riskerar att försvaga eller motverka upplevelsen av dessa kvaliteter.

Abstract

In contemporary urban environments, characterised by constant stimulation and rapid pace, opportunities for pause, reflection, and mental restoration are getting increasingly limited. This study examines what qualities make a landscape feel contemplative and how these qualities can be identified and evaluated in landscape architecture.

The study applies and critically examines the Contemplative Landscape Model (CLM) through a case study of two contrasting gardens: the historic Generalife Garden in Granada and the modern Calouste Gulbenkian Garden in Lisbon. Eight selected views were evaluated using image-based and on-site approaches to explore how different forms of exposure influence the interpretation of contemplative qualities. Sensory conditions and differences between evaluators were also examined.

The findings indicate that CLM provides a useful structure for analysing landscape qualities associated with contemplative potential. However, at several of the views a clear gap was identified between the contemplative potential and the on-site experience. At the sites sensory and contextual factors played a significant role but were not always fully captured by the model.

Overall, the results suggest that contemplative landscapes consist of more than spatial and visual qualities, instead they are created through a combination of spatial design and on-site conditions. Contemplative experiences are strongly shaped by how places are used and affected by their surroundings. Creating environments that support contemplation therefore depends not only on spatial qualities, but also on minimizing sensory and contextual disturbances that could interrupt or weaken the experience of these qualities.

Preface

Throughout our studies in landscape architecture, we have both become increasingly interested in how we can design environments which contribute not only to functional and aesthetic values, but also to psychological and emotional well-being. The work has been carried out as a collaborative effort, shaped by both academic curiosity and personal experiences related to the role of landscapes in supporting mental well-being. Working on this thesis together has been a very rewarding and valuable process of continuous exchange, where our different backgrounds and experiences have complemented each other. Through this collaboration, our understanding of contemplative landscapes has deepened, both as a research topic and as a meaningful aspect of everyday life. We are both very grateful that we have gotten this time to deepen our knowledge and explore this subject which is very dear to us both.

We would also like to express our gratitude to our supervisors for valuable guidance and constructive feedback throughout the process. We also extend our thanks to family and friends who have supported us during this period.

In the following section, we explain our individual connections to the subject and reflect on personal experiences and motivations for choosing to work with this topic.

Therese

The subject of this master's thesis is closely connected to my own life experiences and to the path that has led me to landscape architecture. My background is originally in business and agriculture, and through this I developed an early interest in the relationship between people, land, and the environments that shape our everyday lives.

My interest in health and well-being in outdoor environments became stronger after experiencing accidents and injuries that affected both my body and my way of being in the world. These experiences changed something in me. They made me more aware of the importance of recovery, calmness, and balance, but also of how strongly different environments can affect us. Over time, I became increasingly curious about what happens within us when we enter certain places. Why do some environments make us feel safe, present, and grounded, while others make us feel

stressed or overstimulated? Why do certain landscapes seem to open our senses and strengthen our emotional responses?

In 2020, I made a journey that became especially meaningful for my understanding of this subject. During this time, I lived in my car and spent a lot of time outdoors, especially in forests and natural landscapes. Living close to nature in such a simple way gave me a deeper understanding of stillness and of what nature can offer us. I experienced how peaceful environments can create space for reflection, recovery, and a stronger connection to oneself and the surrounding world.

My interest in spiritual practices connected to presence and inner awareness has also shaped my relationship to this topic. These interests have made me reflect on how landscapes can support not only rest and recovery, but also contemplation and a deeper sense of balance. For me, contemplative landscapes are about more than creating beautiful places. They are about creating environments that allow people to slow down, breathe, and reconnect.

Through this thesis, I have had the opportunity to explore these questions in a more academic way, while still staying close to experiences that are personally meaningful to me. It has deepened my understanding of how landscape architecture can contribute to health and well-being, and strengthened my belief in the importance of creating places that support both body and mind.

Louise

The subject of this master's thesis is very personal to me. In 2018, I experienced burnout, and the years that followed became a slow journey of recovery. Nature has always been important to me, but during this time it got more important than it's ever been before. I began taking daily long walks around a lake near where I lived and step by step it started to make a difference. In moments when my brain felt foggy and overstimulated, and my body felt stressed and tense, being outdoors helped me to relax and recover. Nature gave me a sense of stillness and it was one of the few things that truly made a difference. Not long after this I felt the need to take the connection to nature even further. Together with a close friend I moved into a van and travelled along the coast of Spain and Portugal. Living close to nature in this way really became a turning point for me. The landscapes we encountered

along the way held space for reflection, for silence, and for healing, and in many ways that journey helped me return to myself.

When I later moved back into a city environment, the transition was challenging at times. Urban life can be intense, filled with movement, noise, and constant impressions. Mental fatigue and sensory overload have not always been easy to navigate and at times I have found myself searching for places of refuge, small pockets of recovery within the busy urban life. Close by parks, the sea, and even the cemetery are places that have all offered me moments of recovery.

My own personal experiences, together with the societal challenges related to increasing numbers of people experiencing burnout and mental fatigue, have shaped my interest in contemplative landscape architecture. I strongly believe that landscape architecture can be used for so much more than just decorating our cities, it can be used to restore us.

Today our cities generally aren't designed with the purpose of promoting health and well-being, instead they move too fast and offer us too much sensory stimuli. This thesis is written from a desire to better understand how we, as landscape architects, can create contemplative environments that promote health and well-being. Spaces where people can simply slow down, feel more grounded, and ultimately find balance and peace.

Malmö, May 2026
Therese & Louise

Table of Contents

List of Figures

List of Tables

Abbreviations

Abbreviation	Description
ART	Attention Restoration Theory
CLM	Contemplative Landscape Model
EEG	Electroencephalography
KKAA	Kengo Kuma & Associates
PRS	Perceived Restorativeness Scale
SBE	Scenic Beauty Estimation
SLU	Swedish University of Agricultural Sciences
SRT	Stress Reduction Theory
TRAPT	Tranquillity Rating Prediction Tool
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
VDLA	Vladimir Djurovic Landscape Architecture
WHO	World Health Organization

1. Introduction

Landscapes are more than physical settings. They actively shape how people perceive, think and relate to their surroundings. Research in environmental psychology has demonstrated strong connections between exposure to natural environments and psychological well-being, stress reduction, and restored cognitive capacity (Ulrich, 1984; Kaplan & Kaplan, 1989; Hartig, 2007).

At the same time, contemporary urban environments are becoming increasingly dense and cognitively demanding, placing pressure on attention and emotional regulation (WHO, 2022). Opportunities for stillness and sustained attention are often limited, highlighting the importance of how landscapes are designed and experienced.

While research has demonstrated the restorative effects of natural environments, less attention has been given to how contemplative qualities can be systematically identified and evaluated, particularly across different modes of experience. Direct comparisons between image-based and on-site evaluations of the same landscape remain limited, especially in relation to contemplative qualities. Furthermore, it is not yet fully understood how sensory conditions and individual interpretation influence such evaluations.

To explore these questions, the study compares how contemplative qualities are perceived through photographs and direct experience on site. By analysing selected landscape views in two designed landscapes using the Contemplative Landscape Model (CLM), the study explores how image-based and on-site evaluations, together with sensory conditions and differences between evaluators, influence the interpretation of contemplative qualities.

1.1 Background and Research Context

For most of human history, humans have lived in close interaction with natural environments and ecological systems, often in small social groups. Nature was not separated from everyday life but instead formed the basis for survival, movement and social interaction (Wilson, 1984; Kellert and Wilson, 1993). With urbanisation and changing lifestyles this relationship with nature has been fundamentally reshaped. Today, daily life is largely impacted by built environments, technology, and indoor activities, while direct contact with nature has become less common.

This shift has raised growing concerns regarding mental health and well-being in urban contexts. Research indicates that the environments we are exposed to play a significant role in shaping how we think, feel, and function. Research further shows that spatial and sensory qualities significantly influence how people experience, interpret, and recover from everyday stress and that the environment someone lives in can directly impact as much as 10% of their general health (Clayton, 2012; Olszewska-Guizzo, 2023). A large body of research highlights the positive effects of natural environments and that nature can reduce stress, restore attention, and support overall well-being (Ulrich, 1984; Kaplan & Kaplan, 1989; Hartig, 2007). However, not all environments support these effects equally. Studies further suggest that it is not only the presence of greenery that matters. Instead there are specific spatial and sensory qualities inherent in certain environments that make the difference (Grahn and Stigsdotter, 2010, Olszewska-Guizzo, 2023).

1.1.1 Contemporary Urban Environments

In contemporary society, urban environments are becoming increasingly dense, fast-paced and demanding for the human senses. Noise, visual complexity, artificial lighting and continuous movement require constant

cognitive processing, placing pressure on attention and emotional regulation (WHO, 2022). In such environments, opportunities for stillness and sustained attention are often limited. Urbanisation is also accelerating globally. According to a United Nations report (2025), approximately 45% of the world's population now lives in urban areas, this is more than double compared to the 1950s when the number was around 20% (UN, 2025).

This rapid transition has been described as a potential mismatch between human sensory capacities and the environments in which people now live. We have only been living in cities for a few hundred years and it is possible to argue that we're still adapting to it (Hernando et al. 2010).

Research has linked urban living to negative mental health outcomes, including higher risks of stress-related conditions, anxiety, and mood disorders (Peen et al. 2010; WHO, 2022). Landscapes cannot be understood as neutral backgrounds to urban life, but as active components that influence how environments are perceived, experienced and interpreted (Olszewska-Guizzo, 2023). Concerns about the psychological effects of urban environments are not new. Already in the nineteenth century, Frederick Law Olmsted argued that excessive exposure to artificial stimuli could negatively affect the human nervous system (Olmsted, 1886).

1.1.2 Nature as a Source of Restoration

Environmental psychologists have been researching the restorative potential of the environment around us since the 1960s and it has been empirically proven that contact with natural environments can have restorative effects on our nervous system (Ulrich, 1984; Kaplan & Kaplan, 1989; Hartig, 2007).

One influential theory called the Biophilia Hypothesis, suggests that humans have an innate tendency to seek connections with other living systems, which is rooted in evolutionary development (Wilson, 1984; Kellert and Wilson, 1993).

Empirical research further demonstrates that natural environments support both physiological and cognitive recovery. One important theory called Stress Reduction Theory (SRT) by Roger Ulrich in 1984, demonstrates that exposure to non-threatening natural settings produces measurable physiological and psychological benefits (Ulrich, 1984, cited in Krinke, 2005). These benefits include lower blood pressure, reduced stress and muscle tension, decreased anger, improved mood and support of emotional recovery (ibid.). In one of his most cited studies, patients recovering from surgery healed faster when they had views outside their window of vegetation compared to views of built structures. These findings support the argument that nature exposure contributes to both psychological restoration and physical recovery (Figure 1) (ibid.).

Figure 1. Nature as a source of restoration

Similarly, Kaplan and Kaplan's Attention Restoration Theory (ART) from 1989, proposes that natural environments help restore depleted cognitive resources and that mental fatigue caused by prolonged directed attention can be reduced through exposure to environments characterized by fascination, being away, extent, and compatibility (Kaplan & Kaplan, 1989).

The theory further suggests that "soft fascination", which gently engages attention without demanding effort, is particularly important (ibid.). In urban contexts, where cognitive demands often are high, access to restorative environments may function as an important counterbalance (Hartig, 2007).

1.1.3 From Restoration to Contemplation

While restorative environment theories have been central in understanding how nature supports mental health and well-being, they primarily address relief from stress and mental fatigue. More recent research has further begun to explore how certain environments may support deeper reflective states, often described as contemplative experiences (Krinke, 2005; Olszewska-Guizzo, 2023).

Where restoration concerns recovery, contemplation involves a more sustained and inward-oriented form of awareness, characterised by reflection, presence, and mental stillness (Figure 2). Kaplan and Kaplan (1989) suggest that the most restorative environments may require what they describe as “increasingly high quality restorative settings”, referring to environments that support more profound engagement. They refer to historical examples such as “sacred groves,” which were not only natural environments but also spaces associated with reflection and philosophical thought (Kaplan and Kaplan, 1989). Although they do not elaborate further, this reference suggests that the most restorative environments may be those intentionally structured to support inward attention and deeper experiences. From a contemporary perspective, this idea resonates with what is now described as contemplative landscape design.

Figure 2. From Restoration to Contemplation

1.1.4 Definition of Contemplation

Contemplation is a complex and context-dependent term which does not have a single universal definition (Krinke, 2005). Even if the different interpretations are often closely related, it remains a deeply personal experience, and can therefore have different meanings for different people. According to Krinke (2005) contemplation can, in its simplest form, be described as directed or sustained attention which can be focused on almost anything (Figure 3). Krinke (2005) also brings up that synonymous terms such as “reflect,” “ponder,” and “meditate” can be helpful in understanding the term better.

Historically, the concept has deep roots in religious and philosophical traditions, where contemplation was associated with prayer, meaning-making, meditation, or union with the divine. Across different religions such as Judaism, Christianity, Islam, Hinduism, and Buddhism, contemplation has been understood as a pathway toward transcendence or enlightenment (Olszewska-Guizzo, 2023).

According to Olszewska-Guizzo (2023) contemplation can, in a contemporary context, generally be understood as a state of conscious, reflective awareness where attention is carefully directed toward a particular stimulus, for example visual or auditory. Contemplation aligns closely with mindfulness practices, particularly in its emphasis on non-judgmental awareness and presence in the here and now (Cullen, 2012). Contemplation differs from meditation by engaging with, rather than withdrawing from, the external environment. It often centers on natural elements such as water, light, or vegetation, which connect outer perception with inner reflection (Olszewska-Guizzo, 2023).

Figure 3. Contemplative state of mind

1.1.5 The Contemplative Landscape Model (CLM)

In recent years, research has started to shift from examining the general relationship between humans and nature toward identifying more specific environmental qualities that may support restoration and contemplation in urban landscapes (Bratman et al. 2019; Frumkin et al. 2017, cited in Olszewska-Guizzo, 2023). Analytical frameworks are starting to emerge that attempt to translate contemplative experience into identifiable landscape characteristics.

One such framework is the Contemplative Landscape Model (CLM), which seeks to provide a structured way of understanding and evaluating contemplative qualities in landscapes (Olszewska, 2016; Olszewska-Guizzo, 2023). Rather than treating contemplation as purely subjective, the model proposes that certain environmental features may consistently support reflective and inward-oriented experiences. Importantly, the CLM is designed to assess spatial characteristics associated with contemplative potential, rather than to measure the lived experience of contemplation in a specific situation. This makes it particularly relevant as a design and analytical tool within landscape architecture (Olszewska-Guizzo, 2023).

1.1.6 Research Gaps and Problem Statement

Despite the development of frameworks such as the Contemplative Landscape Model (CLM), several key methodological and analytical challenges remain unresolved. The CLM is designed to assess spatial characteristics associated with contemplative potential, rather than to capture how contemplation is experienced in a specific situation. However, according to Olszewska-Guizzo (2023) the model can be applied both to photographic representations and direct on-site observations. Since these modes of exposure differ significantly in terms of sensory engagement it raises questions about how different forms of landscape exposure influence the evaluation of these qualities.

While images primarily represent visual composition, on-site experience involves multisensory perception and embodied interaction, which may influence how spatial qualities are interpreted and assessed (Olszewska-Guizzo, 2023; Seamon, 2018; Pallasmaa, 2012). Previous research suggests that image-based representations can support the evaluation of visual characteristics, but do not fully reflect the sensory and situational conditions of real environments (Olszewska-Guizzo et al. 2022a). This raises questions about how comparable image-based and on-site evaluations are when applying such a spatial and visually oriented model such as the CLM.

A second challenge concerns interpretation. Although CLM provides a structured framework, its application largely relies on human interpretation. Most existing studies report results at a group level, while variation between individual evaluators remains underexplored (Olszewska-Guizzo et al. 2022b). Differences in perception, attention, and sensory experience may also influence how spatial qualities are interpreted and prioritised, which further raises questions about consistency and reliability in CLM-based evaluations.

Taken together, these challenges reveal a gap in current research concerning how contemplative landscape qualities are evaluated when using the CLM under different conditions of observation and interpretation. In particular, there is limited understanding of how variations in exposure, sensory context, and individual judgement influence the outcomes of CLM-based evaluations.

1.2 Purpose and Aim

The purpose of this thesis is to examine how spatial characteristics associated with contemplative potential can be identified, interpreted, and evaluated in urban environments using the Contemplative Landscape Model (CLM), with particular focus on differences between image-based and on-site evaluations, the role of multisensory conditions, and variation in interpretation between evaluators.

By addressing these aspects, the study aims to contribute to a deeper understanding of the applicability, consistency, and practical use of the CLM as a tool for evaluating contemplative qualities in urban landscapes.

1.3 Research Questions

The study addresses the following research questions:

1. What differences emerge when applying CLM evaluations to the same landscape views through photographic representations compared to direct on-site experience?

2. In what ways do differences between evaluators and their sensory experiences influence CLM-based landscape evaluations?

3. What do the differences identified in Questions 1 and 2 indicate about the applicability, reliability, and use of the CLM in evaluating contemplative qualities in urban landscapes?

1.4 Theoretical Framework

This chapter presents the theoretical framework that supports the study and forms the basis for the methodological design and analytical approach. Key concepts and perspectives are introduced to explain how contemplative landscape qualities can be understood and analysed. The chapter begins by addressing how environmental qualities relate to mental well-being, followed by design-oriented perspectives on contemplative environments. This is complemented by neuroscientific research, which provides empirical support for how different landscape characteristics may influence cognitive and emotional states. The Contemplative Landscape Model (CLM) is then introduced as the main analytical framework of the study, providing a structure to describe and evaluate contemplative landscape qualities. Finally,

the role of multisensory and embodied perspectives are addressed, together with a discussion of how image-based and on-site approaches capture different aspects of landscape perception.

1.4.1 Using Neuroscience for Designing Contemplative Environments

Previous research within environmental psychology and neuroscience suggests that certain environmental qualities may influence both cognitive and emotional states. The impact of a landscape depends not only on the presence of nature, but also on how elements are spatially organised and experienced. Certain spatial qualities can reduce cognitive load and emotional strain, making their integration into design practice increasingly important in overstimulating urban environments (Olszewska-Guizzo, 2023).

Advances in neuroscience have further contributed to this understanding by making it possible to study how environments influence mental states through patterns of brain activity. Using electroencephalography (EEG), researchers measure brainwave frequencies such as Delta, Theta, Alpha, Beta, and Gamma (Abhang, Gawali & Mehrotra 2016). In contemplative landscape research, Theta and Alpha activity are particularly relevant, as they are associated with relaxed attention and mindfulness-like states (Cahn & Polich, 2006; Lagopoulos et al. 2009, cited in Olszewska-Guizzo, 2023).

Within this context, the Contemplative Landscape Model (CLM) can be understood as part of a broader field of environmental neuroscience, including disciplines such as neuroarchitecture and neurourbanism, which examine how environments shape cognitive and emotional well-being (Adli et al. 2017; Berman et al. 2019, cited in Olszewska-Guizzo, 2023).

EEG-based studies suggest that highly contemplative landscapes are associated with more positive neurological responses than generic green spaces or dense urban environments. These environments have been linked

to reduced negative emotional states such as fatigue, tension, and confusion, while dense urban environments tend to show the opposite effect (Olszewska-Guizzo et al. 2020; 2022a; 2022b; Olszewska-Guizzo, 2023). This indicates that not all green environments have the same psychological effects, and that there are specific landscape qualities which are particularly important for mental restoration.

1.4.2 The Contemplative Landscape Model

Building on research in environmental psychology, neuroscience, and contemplative landscape design, the Contemplative Landscape Model (CLM) provides a structured way to understand and evaluate landscape qualities that may support contemplative experience.

1.4.2.1 Introduction to CLM

The Contemplative Landscape Model (CLM), introduced by Agnieszka Olszewska-Guizzo in 2016, is a framework for identifying and describing landscape scenes that support contemplative states of mind. It is based on the idea that specific landscape qualities can influence emotional and mental states, particularly in urban contexts characterised by stress and sensory overload. The CLM functions both as an evaluation tool and a design framework, explaining why certain environments promote calmness, reflection, and psychological restoration. It focuses on the scale of a single view, proposing that a combination of spatial and sensory qualities increases the likelihood of contemplative and restorative experiences (Olszewska-Guizzo 2023).

The model consists of seven components: *Layers of the Landscape, Landform, Biodiversity, Color & Light, Compatibility, Archetypal Elements, and Character of Peace & Silence*, which together form an overall contemplative landscape score. Beyond evaluation, CLM provides practical

guidance for landscape architects aiming to design urban green spaces that support mental well-being. It emphasises the importance of intentional, evidence-based design and maintenance, suggesting that higher CLM scores are associated with greater contemplative and restorative potential (Olszewska-Guizzo 2023).

1.4.2.2 Most Important Aspects for Contemplation

Research shows that the seven contemplative landscape characters do not contribute equally to mental health and well-being outcomes (Figure 4) (Olszewska-Guizzo et al. 2022a). Instead there is a difference between the characters when it comes to psychological responses such as improved mood and certain EEG indicators, including frontal Alpha and Theta activity.

The categories 'Layers of the Landscape', 'Character of Peace & Silence', and 'Archetypal Elements' appear to play a particularly important role when it comes to positive psychological indicators and can therefore be especially valuable to prioritize in design situations where trade-offs are necessary (Olszewska-Guizzo et al. 2022a, cited in Olszewska-Guizzo, 2023).

At the same time, Olszewska-Guizzo (2023) also emphasizes that the remaining characters are still important for supporting a full contemplative experience and should not be overlooked.

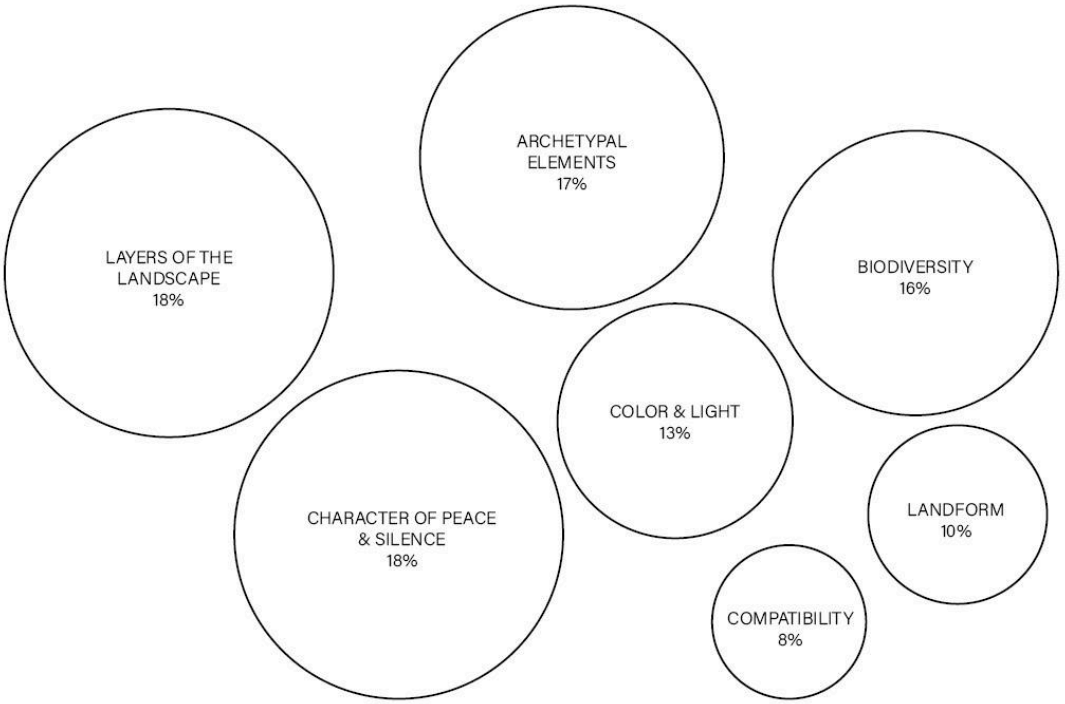

Figure 4. Most Important CLM Characters
Proportional area chart illustrating how the seven contemplative landscape characters contribute to overall mental health and well-being outcomes based on neuropsychological studies. Source: Adapted from Olszewska-Guizzo et al. (2022a).

1.4.2.3 The Seven Contemplative Landscape Components

According to Olszewska-Guizzo (2023), the seven landscape components within the Contemplative Landscape Model (CLM) are central for understanding how certain spatial conditions in green environments can support mental restoration and well-being. The following section contains more detailed descriptions of these components.

1. Layers of the Landscape

Characteristics: Clearly defined foreground, middle ground, and background that creates spatial depth and distant views (Figure 5).

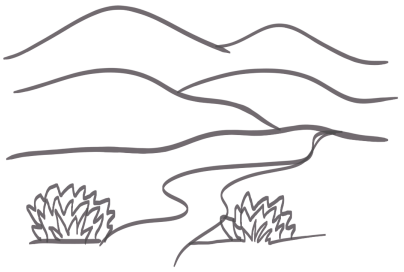

Figure 5. Layers of the Landscape
Visual adaptation, based on Olszewska- Guizzo (2023), illustrating distinct foreground, middle ground, and background.

"Layers of the Landscape" refers to how depth is experienced in a landscape through the relationship between foreground, middle ground, and background. When these layers are clearly defined, the scene becomes easier to read, allowing the observer to shift focus between different distances. This can create a sense of mental distance from everyday stress (Olszewska-Guizzo, 2023). The effect is often strengthened by atmospheric perspective, where elements further away appear softer, less detailed, and slightly bluish, reinforcing the overall sense of depth (Smardon et al. 1986, cited in Olszewska-Guizzo, 2023).

Although urban environments rarely offer the same scale as large natural landscapes, even relatively short long-distance views, of around 400 meters, can create a similar feeling of depth (Olszewska-Guizzo, 2023). The experience of depth and openness relates to the idea that people tend to prefer environments that feel open while still offering a sense of safety, as described in the prospect-refuge theory (Appleton, 1996, cited in Olszewska-Guizzo, 2023). It also connects to the concept of "being away" in the Attention Restoration Theory, where certain environments help people to mentally step back from everyday demands (Kaplan, 2001, cited in Olszewska-Guizzo, 2023). In urban settings, opening up views has also been linked to increased feelings of comfort, freedom, and reduced stress (Skalski, 2007; Tuan, 1990, cited in Olszewska-Guizzo, 2023).

Research suggests that this component is one of the most influential in the CLM, contributing around 18% to overall well-being outcomes. It is strongly

associated with brain activity linked to relaxation and mindfulness (Olszewska-Guizzo et al. 2022b; 2023). These effects seem to occur partly on a subconscious level and are more clearly visible in brain measurements than in what people report themselves (Olszewska-Guizzo, 2023).

2. Character of Peace & Silence

Characteristics: Perceived calmness and refuge, contrast with urban intensity, sense of safety, minimal intrusion, and invitation to rest (Figure 6).

Figure 6. Character of Peace & Silence
Visual adaptation, based on Olszewska- Guizzo (2023), illustrating calm, refuge, and reduced disturbance.

This component refers to landscapes that create a sense of calm and provide a clear contrast to the intensity of urban environments. Such environments can support a shift in pace and attention, allowing people to slow down and mentally reorient themselves (Olszewska-Guizzo, 2023). Key qualities include tranquillity, solitude, and safety, all essential for contemplative experiences.

These qualities can be supported through design strategies, such as enclosure and spatial separation, which reduce exposure to urban activity, while vegetation buffers and water features may limit or mask unwanted noise (Fang & Ling, 2005; Van Renterghem et al. 2015, cited in Olszewska-Guizzo, 2023). Providing seating, accessible paths, and opportunities for longer stays can further support reflection and rest. In some cases, interactive elements may also enhance engagement with the environment (Astbury, 2013; Kershaw et al. 2017, cited in Olszewska-Guizzo, 2023).

Solitude here is understood as the possibility to be undisturbed rather than lonely, which is particularly important in dense urban environments (Berry, 2007; Tost et al. 2015, cited in Olszewska-Guizzo, 2023). Calmness is also

closely related to spatial composition. Environments combining openness with a sense of refuge, such as forest edges or waterscapes, tend to enhance feelings of tranquillity (Herzog & Barnes, 1999). Tools such as TRAPT further highlight the importance of both low noise levels and the presence of natural features in shaping perceived calmness (Pheasant et al. 2010, cited in Olszewska-Guizzo, 2023). Safety is also a prerequisite for contemplative experience and is often linked to visibility, clear spatial structure, and avoidance of concealed or enclosed areas that may feel unsafe (Schroeder & Anderson, 1984; Appleton, 1996, cited in Olszewska-Guizzo, 2023).

Neuropsychological research suggests that this is the second most influential component within the CLM, contributing approximately 18% to overall well-being outcomes. It has been strongly associated with positive emotional responses and patterns of frontal Alpha activity, which are commonly linked to states of relaxation (Olszewska-Guizzo et al. 2022a; 2023).

3. Archetypal Elements

Characteristics: Presence of symbolically resonant natural elements (for example water, trees, paths, stones) that meaningfully influence overall perception (Figure 7).

Figure 7. Archetypal Elements
Visual adaptation, based on Olszewska-Guizzo (2023), illustrating symbolic natural features.

'Archetypal Elements' refer to landscape features that connect the physical environment with deeper psychological meaning. The concept is rooted in Jungian theory, where archetypes are understood as universal symbolic patterns within the collective unconscious (Jung, 1969; 1964, cited in Olszewska-Guizzo, 2023). Within the CLM, these elements include features such as water, paths, clearings, mountains, solitary trees, stones, forests, deserts, and circles.

These elements are understood as carriers of symbolic meaning that may evoke emotional and reflective responses. Different elements are associated with different types of experiences. For example, water is often linked to life and transformation, paths to journeys and transitions, forests to shelter and mystery, and circles to unity and wholeness (Olszewska-Guizzo, 2023). Research on blue spaces has also shown that water environments are associated with improved mood and reduced stress, further supporting their relevance in contemplative settings (Beute et al. 2020, cited in Olszewska-Guizzo, 2023).

Neuropsychological research suggests that this is the third most influential component within the CLM, contributing approximately 17% to overall well-being outcomes. It has been associated with both relaxation and mindfulness-related responses, indicating its role in supporting reflective and emotionally engaging experiences (Olszewska-Guizzo et al. 2022a; 2023).

4. Biodiversity

Characteristics: Visible richness of plant and animal life, naturalistic vegetation, and signs of ecological variation or movement without biophobic elements (Figure 8).

Figure 8. Biodiversity
Visual adaptation, based on Olszewska-Guizzo (2023), illustrating richness and variation in vegetation and natural elements.

In CLM, biodiversity refers to the perceived richness of living elements within a landscape rather than the actual number of species present (Olszewska-Guizzo, 2023). This includes visible signs of life such as movement, seasonal variation, and ecological change, which together contribute to the sense of a dynamic and living environment.

Research on biodiversity and well-being shows mixed results, as measured species richness does not always correspond to how environments are experienced (Fuller et al. 2007; Luck et al. 2011; Dallimer et al. 2012, cited in Olszewska-Guizzo, 2023). Instead, perceived biodiversity appears to play a more important role in shaping contemplative experiences. Landscapes with relatively limited visible biodiversity, such as beaches or other open environments, may still be experienced as highly contemplative (Beute et al. 2020, cited in Olszewska-Guizzo, 2023). This points out the importance of how ecological qualities are perceived rather than how they are measured. For this thesis, this distinction is important because the study does not evaluate greenery in general, but specific spatial situations within two designed gardens.

Balance is also an important factor in this context. Environments that appear overly dense or uncontrolled may evoke discomfort rather than restoration, which relates to the concepts of biophilia and biophobia (Olszewska-Guizzo, 2023). At the same time, research suggests that people tend to prefer curved, irregular, and more natural forms over rigid and highly geometric structures (Bar & Neta, 2006, cited in Olszewska-Guizzo, 2023), reinforcing the role of naturalistic design in supporting positive experiences.

Neuropsychological research suggests that this is the fourth most influential component within the CLM, contributing approximately 16% to overall well-being outcomes (Olszewska-Guizzo et al. 2022a; 2023).

5. Color & Light

Characteristics: Predominantly natural, harmonious color palette, limited harsh contrasts, and perceptible interplay of light and shade (Figure 9).

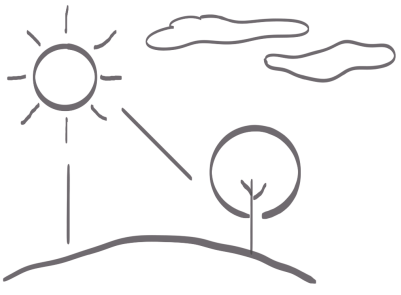

Figure 9. Color & Light
Visual adaptation, based on Olszewska-Guizzo (2023), illustrating seasonal variation, natural light, and visual harmony.

‘Color & Light’ refers to visual qualities that shape how a landscape is perceived and experienced, influencing both atmosphere and emotional tone. Color is dependent on light conditions and can be understood through properties such as hue, saturation, and value (Smardon et al. 1986, cited in Olszewska-Guizzo, 2023). Responses to color may also vary across cultural and geographical contexts, meaning that preferences are not universal (Kaufman & Lohr, 2002, cited in Olszewska-Guizzo, 2023).

Within the CLM, landscapes with predominantly natural and low-saturation color palettes are considered more supportive of calmness, while strong contrasts and highly saturated colors may draw attention and disrupt contemplative experience. Beyond color itself, light and shadow play an important role in shaping how environments are experienced. Subtle changes such as reflections, shifting light patterns, and seasonal variations can enhance awareness of time, stillness, and natural rhythms (Treib, 2005, cited in Olszewska-Guizzo, 2023).

Neuropsychological research suggests that this component contributes approximately 13% to overall well-being outcomes. It has been primarily associated with mindfulness-related responses, indicating its role in supporting attentive and reflective states rather than deeper relaxation (Olszewska-Guizzo et al. 2022a; 2023).

6. Landform

Characteristics: Natural or gently undulating topography, articulated skyline, and forms that subtly guide the gaze upward (Figure 10).

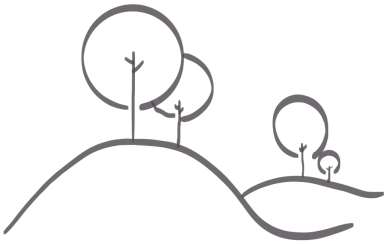

Figure 10. Landform
Visual adaptation, based on Olszewska- Guizzo (2023), illustrating varied terrain, slopes, and topographical features.

‘Landform’ refers to how terrain and skyline shape spatial perception and influence landscape experience. The sky can be understood as a spatial ceiling that frames outdoor environments, and directing attention upward may evoke a sense of vastness, distance, and reflection (Smardon et al. 1986, cited in Olszewska-Guizzo, 2023). These qualities can be supported through different design strategies such as shaping topography, framing the skyline, and guiding views. Reflective surfaces such as water can also extend the presence of the sky into the landscape, reinforcing this effect (Hermann, 2005; Hou, 2015, cited in Olszewska-Guizzo, 2023). Research on blue spaces further suggests that environments with visible water are associated with positive mental health outcomes, including reduced stress and improved mood (Beute et al. 2020; White et al. 2010; White et al. 2013, cited in Olszewska-Guizzo, 2023).

In addition to sky orientation, terrain form itself plays an important role. Research suggests that people tend to prefer smooth, gently undulating, and more natural landforms over rigid and highly geometric shapes (Kaplan et al. 1998, cited in Olszewska-Guizzo, 2023), contributing to a more comfortable and restorative spatial experience. Neuropsychological research suggests that this is the sixth most influential component within the CLM, contributing approximately 10% to overall well-being outcomes. Its effects appear more strongly reflected in self-reported mood than in measurable brainwave responses (Olszewska-Guizzo et al. 2022a; 2023).

7. Compatibility

Characteristics: Spatial coherence and balance between natural and built elements, clarity of composition, and absence of clutter or visual disturbance (Figure 11).

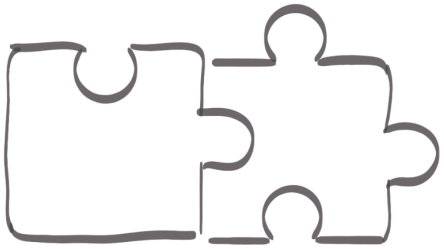

Figure 11. Compatibility
Visual adaptation, based on Olszewska- Guizzo (2023), illustrating environmental coherence, accessibility, and human-nature fit.

‘Compatibility’ refers to how well different elements within a landscape are integrated into a coherent and unified whole. It involves spatial clarity, hierarchy, and a balanced relationship between natural and built features, which together influence how easily a landscape can be understood and experienced (Smardon et al. 1986; Zelanski & Fisher, 1996, cited in Olszewska-Guizzo, 2023).

These qualities can be supported through design approaches that emphasise simplicity and clarity. Reducing visual clutter and limiting unnecessary elements can help create a calmer and more legible environment. The use of emptiness, understood as the deliberate absence of excessive features, can also provide space for reflection (Pasowicz, 2021; Bell et al. 2009, cited in Olszewska-Guizzo, 2023). Clear spatial organisation and structure further support orientation and reduce the risk of disorientation, which is important for maintaining a contemplative experience (Moir, 1978; Hermann, 2005; Krinke, 2005; Tuan, 1990, cited in Olszewska-Guizzo, 2023).

In addition, research suggests that environments which are moderated and show signs of care and organisation tend to produce more positive responses than completely unmanaged or uncontrolled settings (Kaplan et al. 1998; Martens et al. 2011, cited in Olszewska-Guizzo, 2023). This points out the importance of balance between naturalness and structure in supporting positive experiences.

Neuropsychological research suggests that this is the least influential component within the CLM, contributing approximately 9% to overall well-being outcomes. Despite its lower ranking, it has been associated with mindfulness-related responses and remains an essential part of the overall contemplative structure (Olszewska-Guizzo et al. 2022a; 2023).

1.4.3 The Importance of the Senses

While research on restoration has shown that natural environments may reduce stress and support cognitive recovery (Ulrich, 1981; 1984; Kaplan &

Kaplan, 1989), it provides limited insight into how individuals subjectively experience being in a place. To understand this dimension, perspectives on phenomenology need to be addressed.

According to Pallasmaa (2012), the experience of a landscape cannot simply be reduced to measurable stress responses alone. Seamon (2018) further describes place as something that emerges through the “lived body.” From this perspective, perception does not occur at a distance. We do not stand outside space and observe it objectively. Instead, we experience space while moving, standing, turning, sitting, breathing and orienting ourselves. The body is not separate from the environment, it is always already involved in it. Experience arises through an ongoing interaction between the body and its surroundings. Sight, sound, smell, temperature, movement and material qualities all influence how places are perceived. The rhythm of walking, the slope of the ground, the direction of light, and the presence of wind or sound are all examples of aspects that shape how a place is felt. A landscape is not only seen, it is inhabited (Pallasmaa, 2012; Seamon, 2018). From this perspective, landscapes are not only visual settings that can be measured or analysed, but also places that are physically and emotionally experienced through the body.

According to Pallasmaa (2012), modern design has often prioritised vision at the expense of other senses. He argues that meaningful spatial experience instead arises through the integration of multiple senses. Rather than defining contemplation as a measurable psychological state, Pallasmaa (2012) describes how environments gain meaning through this multisensory integration. In such environments, balanced and coherent sensory conditions can support inward attention and reflective awareness (ibid.). From this perspective, experience is not fragmented into separate stimuli, instead, sensory impressions interact and form an integrated whole.

If landscape experiences are multisensory and embodied, an important question arises concerning if such experiences can be captured through images alone. From a phenomenological perspective, it can be argued that a

photograph represents visual composition but does not capture the full sensory and embodied experience of being in a place, including aspects such as sound, movement, and spatial orientation (Pallasmaa, 2012; Seamon, 2018). This does not mean that image-based research is without value. Photographs have been widely used in restoration research (Ulrich, 1984). However, if contemplative experience depends on multisensory coherence and embodied presence, the difference between image-based and on-site evaluation becomes theoretically significant. The following section therefore examines previous research comparing these approaches, in order to clarify how different methods capture landscape experience and how this relates to the evaluation of contemplative environments.

1.4.4 Comparing Image-Based and On-Site Evaluation

In landscape research, image-based and on-site evaluations are among the most commonly used forms of landscape exposure and assessment (Stamps, 1990; Hull & Stewart, 1992; Olszewska-Guizzo, 2023). Image-based methods primarily capture visual composition, whereas on-site approaches involve direct bodily presence and engagement with the environment (Figure 12). As a result, they provide access to different aspects of landscape experience.

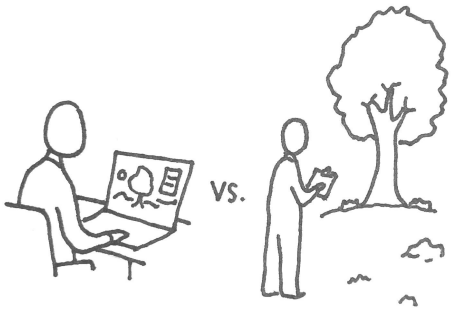

Figure 12. Image-based vs on-site approach

The distinction between the two methods is particularly important in relation to the Contemplative Landscape Model (CLM), which can, according to Olszewska-Guizzo 2023, be applied under both conditions. Understanding how image-based and on-site exposure influence assessment is therefore essential for interpreting the outcomes of CLM-based evaluations.

1.4.5 Image-Based Approaches in Landscape Evaluation

The use of photographs in landscape research has a well-established tradition within environmental psychology and landscape aesthetics (Milgram, 1970; Daniel & Boster, 1976). One important advantage of image-based methods is that they allow researchers to present identical visual material to multiple participants, thereby increasing experimental control and reducing variation related to contextual and situational conditions (Stamps, 1990; Ulrich, 1984). Early studies by Milgram (1970) used photographic slides to examine psychological responses to urban environments. In landscape aesthetics, Daniel and Boster (1976) developed the Scenic Beauty Estimation (SBE) method, in which standardised photographs were used to assess landscape preference. By ensuring that all participants evaluated the same visual scenes, these approaches enabled systematic comparison across environments and increased the consistency of results.

Image-based exposure has also been widely applied within research on Attention Restoration Theory (ART). Kaplan and Kaplan (1989) describe studies in which participants evaluate images of natural and urban environments in terms of their perceived restorative qualities. Within this framework, landscapes are primarily understood as visual stimuli that influence attention and cognitive functioning. Similarly, research related to Stress Reduction Theory (SRT) has often been conducted under controlled laboratory conditions using visual material. Ulrich (1984) demonstrated that exposure to images of natural environments led to more positive physiological responses than exposure to urban scenes. Such experimental designs make it possible to isolate visual characteristics while measuring physiological indicators under controlled conditions.

Comparative research has further examined how image-based and on-site evaluations relate to one another. A meta-analysis by Stamps (1990) found that assessments of environmental preference were often similar across photographic and real-world exposure. In a later review, Stamps (1999)

concluded that image-based evaluation can provide stable and reliable results when the focus is on visual qualities such as scenic attractiveness or landscape preference.

1.4.6 On-Site and Multisensory Landscape Experience

Compared to image-based methods, on-site exposure involves direct bodily presence and engages the observer's senses in a more complex and multisensory way, including sound, temperature, smell, movement, and spatial depth (Pallasmaa, 2012; Seamon, 2018; Hull & Stewart, 1992). Empirical research highlights important differences between image-based and on-site exposure. Hull and Stewart (1992) found that although photographic and on-site evaluations often show correlations, responses in real environments tend to involve stronger emotional engagement and greater variability. Factors such as weather conditions, social presence, and spatial immersion further influence the experience of landscapes on site. Research by De Kort et al. (2006) also shows that mediated environments, such as images or virtual representations, do not fully reproduce the emotional responses that occur when multiple sensory inputs are present. Similarly, studies of urban soundscapes demonstrate that acoustic conditions play a key role in shaping perceived calm and restoration (Figure 13) (Cerwén & Mossberg, 2019).

Figure 13. Complexity of real life environments

Further support for this is found in studies showing that on-site exposure to highly contemplative landscapes is associated with increased frontal alpha and theta brain activity, which are linked to mindfulness and wakeful relaxation (Olszewska-Guizzo et al. 2022a; Olszewska-Guizzo, 2023). These effects have not been observed to the same extent in image- or video-based exposure (ibid.).

Despite the positive aspect of stronger sensory experience, on-site research also introduces some methodological challenges. As illustrated in Figure 14, factors such as weather, social context, and other uncontrolled conditions can influence how landscapes are experienced and evaluated (Olszewska-Guizzo, 2023). This makes it difficult to isolate specific variables and determine cause-and-effect relationships. Laboratory-based studies using photographs on the other hand allow researchers to control the environment and examine individual stimuli under more stable conditions (ibid.).

Figure 14. Factors influencing on-site landscape evaluation

1.4.7 Strengths and Limitations of Image-Based and On-Site Approaches

Research shows that image-based and on-site evaluations reflect two distinct ways of understanding landscape experience. Image-based methods are most suitable when the aim is to evaluate visual composition under controlled conditions, while on-site exposure is more appropriate for understanding how landscapes are experienced in real-life situations, including sensory and situational factors. Image-based methods enable direct comparison by standardising what is seen and reducing external influences. In contrast, on-site exposure involves being physically present in the environment, where factors such as sound, movement, weather, and social activity influence how the landscape is perceived. Rather than competing, the two approaches can be seen to address different aspects of landscape evaluation and complement each other (Stamps, 1990; Hull & Stewart, 1992).

2. Method

This chapter presents the methodological framework of the study, including the overall research design, the case study approach and data collection procedures. It describes how the Contemplative Landscape Model (CLM) was applied and how the selected sites and views were analysed through image-based, on-site and sensory evaluations. The chapter also presents the criteria for site and view selection, as well as the study's analytical approach and limitations of the study.

2.1 Overall Research Design

This study applied a qualitative, multi-phase research design combining image-based, on-site and sensory evaluation methods within a comparative case study approach. A qualitative approach was chosen to allow in-depth exploration of landscape perception and experiential qualities not easily captured through purely quantitative methods (Creswell & Creswell, 2018). Furthermore, a case study design enables in-depth investigation of complex phenomena within real-life context (Yin, 2018).

The research explores how contemplative landscape qualities can be identified, interpreted and evaluated using the Contemplative Landscape Model (CLM) developed by Olszewska (2016); Olszewska-Guizzo (2018); Olszewska-Guizzo et al. (2023). The theoretical framework presented in Chapter 1.4 outlines relevant theoretical perspectives relevant to the study. It builds on previous research on contemplative landscape design, multisensory landscape perception, and the CLM, providing the methodological and analytical basis for the study. More specifically, the theoretical framework informed the CLM application and interpretation of similarities and differences between image-based, on-site and sensory evaluations.

The empirical part of the study was organised in three phases, all applied to the same eight views across the two case study sites. Phase 1 consisted of

image-based CLM evaluations, conducted independently by the two evaluators prior to the fieldwork. Phase 2 and Phase 3 were then carried out on site, where each view was first evaluated using the CLM, followed immediately by sensory observation. All evaluations were conducted independently to minimise influence and ensure comparability.

By analysing the same views throughout the different phases, it became easier to compare how landscapes were perceived under different conditions (Table 1).

Phase	Method	Input	Output
1	Image-based	Photographs	CLM scores
2	On-site	Physical environment	CLM scores
3	Sensory on-site	Embodied experience	Sensory observations and scoring

Table 1. Three-phase methodological structure
Overview of the study's multi-phase data collection process, showing how the same eight selected landscape views were evaluated through image-based CLM evaluation (Phase 1), on-site CLM evaluation (Phase 2), and sensory on-site observation (Phase 3).

Table 1 illustrates the methodological structure of the study, showing how the same eight landscape views were evaluated through three phases: image-based CLM evaluation, on-site CLM evaluation, and sensory on-site observation. All phases were conducted independently by two evaluators, enabling comparison across methods and individual interpretation.

2.2 Motivation for Choosing the CLM

According to Olszewska-Guizzo (2023), there are several existing tools addressing similar themes as CLM, including the Scenic Beauty Estimation

(SBE) method, the Perceived Restorativeness Scale (PRS), and the Tranquillity Rating Prediction Tool (TRAPT). The PRS was developed by Hartig et al. in 1997, and the TRAPT by Watts et al. in 2009. Olszewska-Guizzo (2023) argues that these frameworks often rely primarily on subjective self-reports and may not provide detailed design guidance or clear links to health outcomes.

Based on Olszewska-Guizzo (2023), we interpret that one of the most important distinctions between the Contemplative Landscape Model (CLM) and several other landscape evaluation frameworks is that CLM has been validated not only through subjective participant ratings, but also through neuroscientific methods. Empirical evidence from neuroscience can thereby be used to relate concepts that are often described in abstract or experiential terms to more measurable aspects of human perception and brain activity.

This can be understood as enabling contemplative qualities to be analysed in a more structured and measurable way. From this perspective, the CLM is particularly useful for landscape architecture and relevant for this study. While neuroscientific methods were not applied within the scope of this study, previous research demonstrates that such methods have contributed to establishing the validity of the CLM as an evaluative framework.

2.3 Case Study Approach

The empirical part of the study was conducted using a qualitative case study approach. This approach is suitable for examining complex phenomena within their real-world context, particularly when the relationship between phenomenon and context is not clearly defined (Yin, 2018). It also allows for in-depth exploration of meanings, perceptions, and experiential qualities (Creswell & Creswell, 2018). In this study, the case study design enabled a detailed investigation of how contemplative landscape qualities are identified and interpreted in specific environments. Two gardens were selected: the Generalife Garden in Granada, Spain, and the Calouste

Gulbenkian Garden in Lisbon, Portugal. These case study sites enabled a comparative analysis of how contemplative qualities are expressed, perceived and evaluated in distinct landscape settings.

Within each garden, a limited number of landscape views were selected for detailed analysis. This made it possible to examine how contemplative qualities were interpreted when the same views were evaluated through both image-based representations and direct on-site experience. The approach also enabled the application and critical reflection of the Contemplative Landscape Model (CLM) in relation to real landscape environments, while supporting a deeper understanding of the relationship between landscape design and human experience.

2.4 Site Selection

The selection of the Generalife Garden in Granada, Spain, and the Calouste Gulbenkian Garden in Lisbon, Portugal is closely connected to the purpose and aim of this thesis. The study seeks to improve the understanding of how contemplative qualities in urban landscapes can be identified, interpreted and evaluated using the Contemplative Landscape Model (CLM). Both gardens were designed to support rest, calmness and reflection, making them particularly suitable for exploring contemplative landscape qualities. The sites are further recognised examples of designed gardens with clearly articulated spatial structures and strong experiential qualities, while also representing different historical periods and landscape architectural traditions.

Although the two case study sites originate from different historical and cultural contexts, both are located within, or in close relation to, dense urban environments. The Generalife Garden forms part of a historic cultural landscape, whereas the Calouste Gulbenkian Garden functions as a green space within a modern urban setting. This contrast enables an exploration of

how contemplative qualities are expressed in landscapes with different relationships to the surrounding urban context.

The selection of the two case study sites in the southern part of Europe, is further motivated by an interest in how a warmer climate may, in the future, influence spatial design and sensory experience in Scandinavia. Both gardens offer a variety of spatial conditions, enabling a selection of views with diverse characteristics. This supports the comparison between evaluators and allows for reflection on the flexibility, usability and reliability of the CLM. The following sections introduce each selected case study site in more detail, beginning with the Generalife Garden in Granada.

2.4.1 The Generalife Garden

The Generalife Garden is located in Granada, Spain, and forms part of the historic Alhambra complex. The garden originated during the Nasrid dynasty and represents a traditional Moorish garden design characterised by enclosed courtyards, water channels, structured vegetation and strong spatial organisation.

The spatial structure of the garden is defined by a sequence of enclosed spaces, pathways and terraces where water features, vegetation and architectural elements interact to create a distinctive sensory atmosphere. The presence of flowing water, filtered light and shaded spaces contributes to the calm and contemplative character often associated with the garden.

2.4.2 The Calouste Gulbenkian Garden

The Calouste Gulbenkian Garden is located in Lisbon, Portugal, and was developed during the twentieth century as part of the Calouste Gulbenkian Foundation cultural complex. The garden represents a modernist landscape

design that combines naturalistic planting, open lawns and water surfaces with carefully composed spatial sequences.

In contrast to the historic structure of the Generalife Garden, the Calouste Gulbenkian Garden is characterised by more fluid spatial organisation and naturalistic vegetation patterns. The landscape includes open grassy areas, wooded sections and water features that together create a varied park environment within the urban context of Lisbon.

2.5 View Selection

In this study, the term “view” refers to a clearly defined spatial perspective within each case study site, selected for detailed evaluation and comparison across all phases. The selection of views formed an important part of the methodological design of the study. The aim was not to represent the chosen gardens in their entirety, but rather to select a range of landscape views that reflect different spatial situations and environmental qualities.

Within each garden, several potential views were initially considered. Four representative views were then selected in each garden, resulting in a total of eight views which were included in the analysis. The selection process began with an exploratory review of publicly available images and maps of the gardens which helped identify views with spatial characteristics relevant to the Contemplative Landscape Model (CLM).

The selected views included enclosed courtyard spaces, pathways, and areas characterised by strong water features and structured vegetation. They represent a range of spatial conditions in terms of openness, vegetation density, movement, light, sound and materiality. This variation makes it possible to examine how contemplative qualities can be found across different views within the same garden, as well as how these qualities can be evaluated using the CLM. The presence of water, vegetation, shade and

architectural elements creates distinct sensory conditions that are particularly relevant for comparing image-based and on-site evaluations.

To support spatial orientation and ensure consistency in view selection, overview maps and site figures were used to document the location and distribution of selected viewpoints within each case study site.

The views within the gardens were selected based on the following criteria:

- spatial variation, including both enclosed and more open spaces
- variation in vegetation structures and landscape layers
- presence of contemplative qualities such as water elements, architectural features or pathways
- potential for sensory experiences, including sound, light conditions or atmospheric qualities

2.5.1 Selection of Views in the Generalife Garden

Within the Generalife Garden, four views were selected to represent a range of spatial situations, vegetation compositions, movement patterns and sensory qualities. Two views were chosen within the Generalife Palace, and two were chosen outside the palace.

2.5.2 Selection of Views in the Calouste Gulbenkian Garden

Four views were also selected within the Calouste Gulbenkian Garden to capture different spatial and sensory conditions within the park. Most of the selected views were located in the southern extension of the garden, while one view was situated in the original part of the park.

2.6 Data Collection

Data collection was carried out through a combination of image-based and on-site evaluations using the Contemplative Landscape Model (CLM), complemented by a separate sensory evaluation. The process included image searches, photographic documentation, and on-site landscape observations during visits to the two case study sites.

The data collection was structured in two main stages. First, all image-based evaluations (Phase 1) were conducted independently by the two evaluators prior to the field visits. Second, the fieldwork was carried out on site during three consecutive days in each park, where Phases 2 and 3 were conducted sequentially at each view. For each view, the on-site CLM evaluation (Phase 2) was immediately followed by the sensory observation (Phase 3) before proceeding to the next view.

During fieldwork, all evaluations and observations were conducted independently by the two authors of the thesis, hereafter named evaluators, to reduce the risk of influencing each other's interpretations.

The combination of image-based and on-site evaluations made it possible to examine how physical presence, movement, sound and microclimatic conditions influence the evaluators' perception when applying the CLM. This comparison also made it possible to investigate where the model worked well, and where it became more difficult to apply consistently.

2.6.1 Application of the Contemplative Landscape Model (CLM)

In this study, the Contemplative Landscape Model (CLM) was used as a structured tool to evaluate the contemplative qualities of selected landscape scenes. Following Olszewska-Guizzo's (2023) guidance, each evaluation began with an initial general observation, where the evaluator was

encouraged to register the overall spatial impression before moving on to a more systematic analysis of the CLM characters.

In line with the model's approach, the evaluators aimed to minimise the influence of personal preferences, emotional reactions, or aesthetic judgments not directly related to the landscape itself. When photographs were used, the evaluation focused on the landscape rather than the technical or artistic qualities of the image.

The analysis was then structured according to the seven characters defined within the CLM: 'Layers of the Landscape', 'Landform', 'Biodiversity', 'Color & Light', 'Compatibility', 'Archetypal Elements', and 'Character of Peace & Silence'. Each component was individually evaluated using predefined guiding questions (Appendix 1; 2) and rated on a scale from one to six, organised into three interpretative levels (1-2, 3-4, 5-6). This interval-based scoring system allowed for a degree of flexibility when a view did not fully correspond to one predefined condition.

After calculating both the individual and the group average score across all seven components, the resulting scores were interpreted in relation to thresholds identified in previous CLM research (Table 2). Landscapes scoring above approximately 4.33 were interpreted as having high contemplative potential, while lower scores indicated moderate or limited contemplative potential (Olszewska, 2016; Olszewska-Guizzo, 2023).

POINTS	CONTEMPLATIVE SCORE	OUTCOME
> 4.33	High	High likelihood of supporting a positive contemplative response in most individuals.
3.83 - 4.33	Average	Low to no likelihood of supporting a positive contemplative response in most individuals, which is typical of many existing urban parks and gardens
< 3.83	Low	Very low likelihood of supporting a contemplative response in most individuals, as the environment is more likely to create mental overload and tension.

Table 2. CLM score interpretation thresholds
Interpretation framework for CLM scoring levels used to assess contemplative landscape potential. Source: Adapted from Olszewska (2016) and Olszewska-Guizzo (2023).

Table 2 summarises how CLM scores were interpreted throughout the study and illustrates the threshold values used to distinguish between low, average, and high contemplative potential. This scoring structure provided a consistent evaluative framework across all phases and supported direct comparison between image-based and on-site evaluations.

The CLM was applied consistently across both image-based and on-site evaluations, ensuring comparability between phases while allowing differences in perception to be identified and analysed.

The evaluations were conducted in accordance with the recommended use of the CLM. Observations were made from a ground-level perspective corresponding to the natural human field of vision, in order to reflect how landscapes are typically experienced by users. According to the model, evaluations should ideally be carried out under conditions where key landscape elements are clearly visible and not obstructed, and crowded environments should ideally be avoided (Olszewska-Guizzo, 2023).

However, it was not possible within the scope of this study to control factors such as visitor presence or environmental conditions during the site visits. As a result, several evaluations were conducted under conditions where movement and human activity were present. While this may have influenced perception and scoring, it also reflects the real conditions under which urban green spaces are typically experienced. The selected case study sites were therefore evaluated within their actual urban context rather than under controlled conditions.

The complete CLM evaluation frameworks used for both image-based and on-site evaluation are provided in Appendix 1; 2.

2.6.2 Phase 1 – Image-Based CLM Evaluation

In the first phase, the selected eight landscape views were evaluated using photographic representations. This phase was conducted prior to the field visits and aimed to assess contemplative landscape qualities based solely on visual information.

The images used in this phase were selected based on the criteria described in Section 2.5. Each image represented a clearly defined view that was later revisited during the on-site evaluation, ensuring consistency across all phases.

Each evaluator independently analysed all images using CLM evaluation sheets. The full CLM photo-analysis checklist used during Phase 1 is provided in Appendix 1. For each view, approximately 15–30 minutes were spent evaluating spatial composition, vegetation structure, presence of water elements and architectural elements visible in the image.

By conducting this phase before the on-site visits, the evaluation was not influenced by prior sensory or embodied experience of the landscapes.

2.6.3 Phase 2 – On-Site CLM Evaluation

In the second phase, the same eight landscape views were evaluated on site using the same CLM framework, scoring system and evaluation procedure as applied in Phase 1. The complete on-site CLM evaluation protocol is presented in Appendix 2. The purpose was to examine how the evaluation of contemplative landscape qualities may change when the evaluators are physically present in the environment.

Each view was visited during fieldwork in the Generalife Garden in Granada and the Calouste Gulbenkian Garden in Lisbon. At each view, the evaluators spent approximately 15–30 minutes observing the landscape and completing the evaluation.

To ensure comparability between phases, photographs were taken from approximately the same view as those used in Phase 1. These images served as documentation and confirmed that the same views were analysed.

Photographic documentation was also used to verify positional consistency between image-based and on-site evaluations, ensuring that the same spatial perspectives were revisited throughout the study.

In contrast to Phase 1, this phase involved direct physical presence in the landscape, allowing the evaluators to experience spatial depth, environmental context and atmospheric conditions.

2.6.4 Phase 3 – Sensory On-Site Observation

The third phase focused on the multisensory and embodied experience of the landscape environments. The sensory evaluation framework used during fieldwork is included in Appendix 3. This phase was conducted immediately after the on-site CLM evaluation at each view, allowing the sensory observations to be directly related to the same spatial context.

While Phase 1 and Phase 2 evaluated landscape qualities primarily through the CLM framework, this phase explored how additional multisensory experiences may influence the perception of contemplative landscape qualities while being physically exposed to the environment. At each location, approximately 15–30 minutes were spent observing and documenting sensory impressions.

Four sensory dimensions were documented:

- Visual (sight): visual atmosphere, spatial composition, movement and rhythm
- Auditory (hearing): sound sources, intensity and perceived spatial distance
- Olfactory (smell): origin, intensity and duration of scents
- Tactile (touch): temperature, air movement, humidity and bodily sensations

Each sensory dimension was evaluated using a six-point scale and accompanied by short descriptive notes capturing atmospheric impressions and embodied responses experienced at the site (Appendix 3). This approach was inspired by phenomenological perspectives on embodied perception and multisensory experience of place (Pallasmaa, 2012; Seamon, 2018).

Unlike Phases 1 and 2, this phase did not involve CLM scoring, but instead focused on capturing qualitative and embodied aspects of landscape experience that extend beyond visual evaluation.

The sensory observation phase should be understood as an exploratory qualitative complement rather than a validated measurement tool. The purpose was not to objectively measure sensory impact, but to document how multisensory and embodied conditions influenced the evaluators' perception of contemplative qualities on site. The sensory observations therefore functioned primarily as an interpretative support for comparing CLM-based evaluations with lived on-site experience. The reflective evaluation questions used to support post-evaluation interpretation are provided in Appendix 4.

2.7 Analytical Approach

After completing the three evaluation phases, the scores and descriptive notes from both evaluators were compiled and organised in Excel spreadsheets and text documents. This facilitated a systematic comparison of the scores and notes assigned to each landscape view and CLM component across the different phases of the study. The CLM evaluation checklists, sensory observation framework, and reflective evaluation questions used to support interpretation throughout this analytical process are provided in Appendix 1; 2; 3; 4.

Comparative tables were used to organise, synthesise, and interpret the collected material, supporting comparison across phases, views, case study sites, and evaluators.

The collected material was analysed through a comparative and interpretative approach, focusing on comparing similarities and differences between the three phases, as well as between the two evaluators. Rather than presenting results separately for each phase, the analysis combines the findings across the different phases. The overall structure of this process is illustrated in Figure 18.

The results are therefore structured by case study site and individual view, where findings from all three phases are presented and analysed together for each view.

This structure enables the study to directly address the research questions by comparing how CLM evaluations differed between image-based and on-site conditions, how sensory experiences influenced landscape perception, and how evaluator variation affects interpretation and scoring.

The analysis was conducted through a series of comparative procedures based on repeated evaluation of the same eight views across differing conditions and evaluators.

First, CLM scores from Phase 1 and Phase 2 were compared to identify similarities and differences in how contemplative landscape qualities were perceived through photographic representation versus direct on-site exposure (Figure 15).

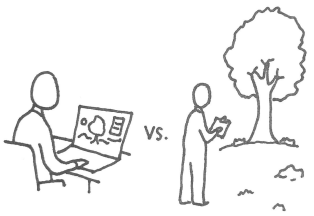

Figure 15. Comparison between image-based and on-site CLM evaluations

Second, the sensory evaluations from Phase 3 were analysed in relation to the CLM findings in order to explore how multisensory and embodied experiences may influence the perception and evaluation of contemplative landscape qualities (Figure 16).

Figure 16. Comparison between CLM evaluation and sensory observation

Third, the results from the two evaluators were compared in order to identify potential differences in interpretation and CLM scoring. The sensory observations were also compared between evaluators to examine how sensory qualities were experienced and described (Figure 17).

Figure 17. Comparison between evaluators

These comparisons were embedded within each view and are later synthesised across all views in order to identify overall patterns and differences between case study sites, evaluation methods and evaluators. This structure later became the basis for how the results were organised and presented in Chapter 3.

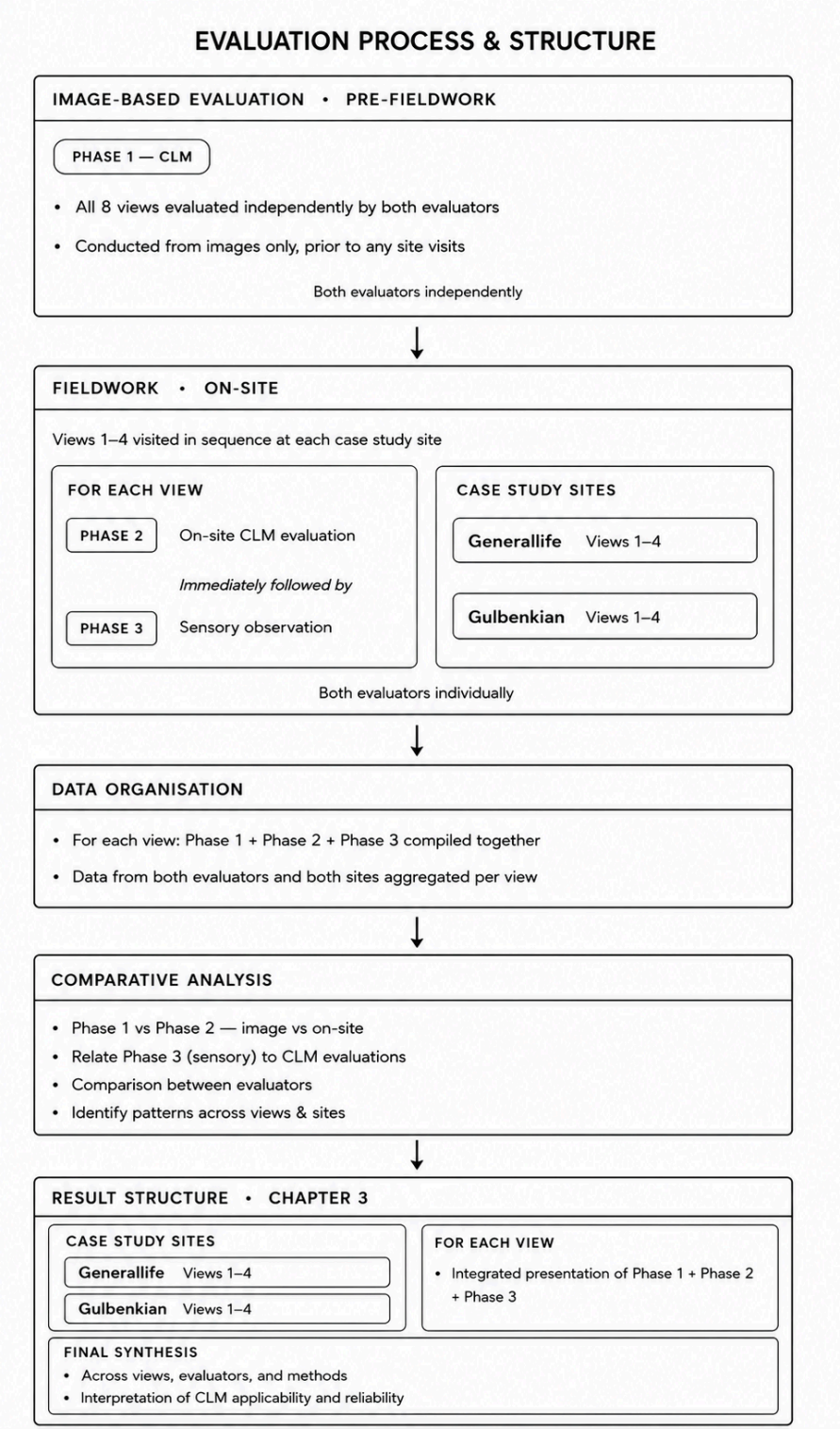

Figure 18. Analytical structure and results integration process
Overview of how findings from Phase 1-3 were compiled, compared, and synthesised within each selected landscape view across both case study sites.

Figure 18 illustrates the analytical framework of the study, showing how the three evaluation phases were systematically integrated within each view and later synthesised across sites, evaluators, and methods. This structure supported clear methodological alignment between data collection, analysis, and the presentation of results.

2.8 Limitations

This study has several limitations related to its scope and methodology delimitations that should be acknowledged. The findings should therefore be understood as exploratory and context-specific rather than broadly generalisable.

First, the study is based on a limited empirical sample consisting of eight selected views across two case study sites. While this allows for in-depth comparative analysis, it restricts the broader transferability of findings to other landscape contexts.

Second, the evaluations were conducted by two independent evaluators, which introduces subjective interpretation despite the structured CLM framework. Although evaluator differences formed an important part of the analysis, individual perception may still influence scoring and sensory observations. Since the study aimed to explore interpretative variation rather than establish statistical generalisability, the use of two evaluators was considered appropriate for enabling detailed comparative analysis across methods and conditions.

Third, on-site evaluations were influenced by changing environmental conditions such as weather, soundscapes, visitor presence, and temporal factors, which may affect sensory experiences and landscape perception. These dynamic variables are difficult to fully standardise and may impact reproducibility.

Fourth, the sensory observation phase relied on qualitative and experiential documentation, which inherently involves interpretative subjectivity.

Finally, the study did not incorporate physiological or neuroscientific measurements and therefore cannot directly verify psychological or neurological responses to contemplative environments.

Despite these limitations, the multi-phase methodological design provides valuable comparative insight into how contemplative landscape qualities are perceived across different modes of exposure and evaluation.

3. Results

This chapter presents the results of the empirical study following the analytical structure outlined in Section 2.7. Rather than presenting findings separately for each phase, the results are organised by case study site and individual view. The empirical material consists of eight selected views across two case study sites: four views in the Generalife Garden in Granada, Spain, and four views in the Calouste Gulbenkian Garden in Lisbon, Portugal.

The results are presented in two main sections, one for each garden. Within each site, four views are analysed individually. For each view, findings from the image-based CLM evaluation (Phase 1), on-site CLM evaluation (Phase 2), and sensory observation (Phase 3) are integrated and presented together, followed by a comparison between the two evaluators. The evaluation frameworks used to generate these results are presented in Appendix 1; 2; 3; 4.

This structure enables direct comparison between image-based, on-site, and sensory evaluations within each specific spatial context, while also supporting broader comparisons across views, evaluators, and case study sites. In this way, the results directly address the study's research questions concerning how contemplative landscape qualities are identified, interpreted, and evaluated under different conditions of exposure and experience.

3.1 The Generalife Garden

The Generalife Garden is located on a hillside, in eastern Alhambra in Granada, southern Spain. It consists of three main sections: the Lower Garden, the Generalife Palace, and the Upper Garden. The gardens uniquely blend nature and architecture (Alhambra-Palace.org, n.d.). Together with the Alhambra, the Generalife forms part of a historic cultural landscape above

the city. Although close to Granada's urban fabric, it has historically functioned as a retreat, separated through topography, walls, and spatial layout.

The garden was most likely built in the late 13th century or in the beginning of 14th century as a summer palace and retreat for the Nasrid rulers of Granada (Ruggles, 2008; Alhambra-Palace.org, n.d.) The palace and garden complex was initiated under Sultan Muhammad III (r. 1302–1308) and later renovated by Ismail around 1319 (ibid.). Connected to the Alhambra by a protected passageway, the Generalife served as a place for rest and enjoyment, characterised by gardens with water channels, fountains, shade, and enclosed spaces (Ruggles, 2008).

The design is closely connected to Islamic and Moorish garden traditions. Enclosure, symmetry, geometry, water, shade, and vegetation structure space and sensory impressions, reflecting ideals of paradise where order, balance, and calmness are central (Ruggles, 2008). These characteristics are central to the CLM. Although altered over time, its spatial structure and focus on enclosure and sensory control remain visible. Since 1984, the Generalife has been listed as a UNESCO World Heritage Site together with the Alhambra (UNESCO, 2023).

Today, only two parts of the original garden remain largely intact: the Court of the Acequia (Patio de la Acequia) and the stairway rising through a grove of trees to the upper site (Ruggles, 2008). These areas continue to express the garden's original intention of the garden as a place for retreat and contemplation.

Unlike the more open and ecological structure in the Calouste Gulbenkian Garden, the Generalife Garden is characterised by a strong spatial definition and symbolic order. Movement is guided through narrow paths and axial layout, creating sequencing rhythm and carefully composed sensory experience.

The following sections present the four selected views individually. Each integrates image-based, on-site, and sensory evaluations to explore contemplative landscape qualities across different conditions. Figure 19 presents an overview map of the four selected study views, providing spatial orientation and supporting interpretation of how contemplative qualities vary across the site

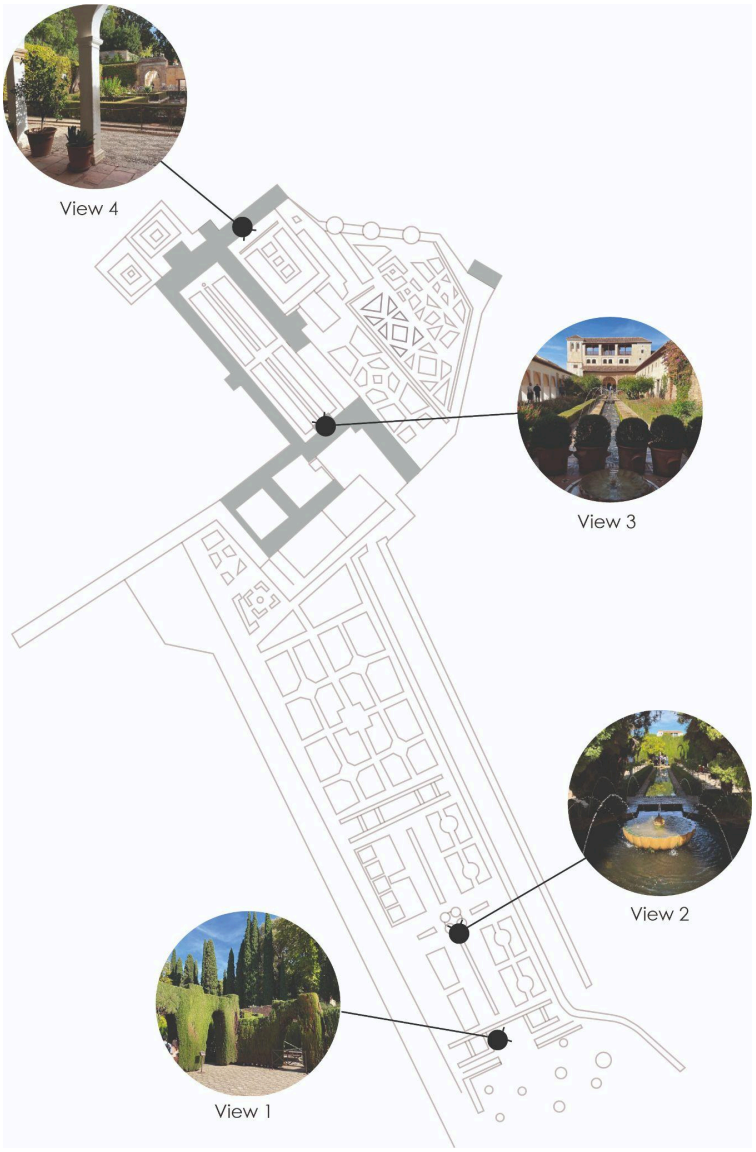

Figure 19. Overview map of the selected study views within the Generalife Garden, Granada

The figure illustrates the spatial distribution of the four selected evaluation views across the Generalife Garden site. The map is schematically drawn for orientation purposes only; inaccuracies in proportions and exact positions may occur.

3.1.1 View 1 - Entrance in the New Garden

Image view **On-site view**

Figure 20. Entrance in the New Garden: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Thenextcrossing.com (n.d.).

Description of the View

View 1 is located in the New Garden, also known as the Lower Garden, which is the first part of the Generalife Garden encountered by visitors (Figure 19; Figure 20). The view functions as an entrance to the garden complex, serving as a transition into the garden. The area was developed during the twentieth century and has a more open and movement-oriented character compared to the enclosed palace gardens (Ruggles, 2008; Alhambra- Palace.org, n.d.; AlhambraYGeneralife.org, 2021).

The view is characterized by trimmed hedges shaped like a fortress and tall cypress trees positioned on a hill, drawing the gaze upwards.. At first it was difficult to locate the same view that was shown in the image at the site, which was partly due to discrepancies between the photographed scene and the actual site. On-site there was work equipment that wasn't in the photo, a bench had been relocated and there was a bit of difference in the growth of

the trimmed hedge. These differences between the image and the on-site view (Figure 20) were important for understanding how site conditions can affect both perception and contemplative evaluation.

CLM- and Sensory Scores

Scores from the CLM evaluation for View 1 are presented in Table 3. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of Evaluator 1 and 2.

Table 3. CLM and sensory scores at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	3	3	3.0
Landform	3	2	2.5	4	5	4.5
Biodiversity	2	2	2.0	3	4	3.5
Color & Light	4	5	4.5	5	4	4.5
Compatibility	6	5	5.5	4	3	3.5
Archetypal Elements	6	2	4.0	6	3	4.5
Character of Peace & Silence	5	5	5.0	2	2	2.0
Average	*4.0*	*3.4*	*3.7*	*3.9*	*3.4*	*3.6*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	1	3	2.0
Average	*1.3*	*2.8*	*2.0*

Generally the scoring is considered fairly reasonable, as the view was not experienced as particularly contemplative. However, Evaluator 1's average on-site score ends up within the range of an average contemplative score. This does not seem entirely reasonable, since the overall impression on-site was that the level of contemplation was low, mainly due to the presence of people who disrupted the experience of the place.

Differences Between Using Image-Based and On-Site Evaluations

Table 4 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 4. Differences in scores between image-based and on-site evaluations at view 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	3	3	3.0
Landform	3	2	2.5	4	5	4.5
Biodiversity	2	2	2.0	3	4	3.5
Color & Light	4	5	4.5	5	4	4.5
Compatibility	6	5	5.5	4	3	3.5
Archetypal elements	6	2	4.0	6	3	4.5
Character of Peace & Silence	5	5	5.0	2	2	2.0
Average	*4.0*	*3.4*	*3.7*	*3.9*	*3.4*	*3.6*

As shown in Table 4, Evaluator 1 changed scores between image and on-site in all categories except 'Archetypal Elements'. Evaluator 2 changed scores in all categories except 'Layers of the Landscape'. The group average scores are different in every category except 'Color & Light'. Overall, Evaluator 1 scored higher on image than on-site, while Evaluator 2's average scores were the same across both methods. Combined, the group average was higher for image than on-site.

Overall there was a considerable amount of information perceived on-site that was not understood through the photograph. In some cases the information was crucial for understanding the place, while in others less significant. One particularly important factor was the realization that the location functions as an entrance. This realization changed the perception, character and experience of the place entirely, shifting from the impression of a more secluded setting to a more exposed and transitional space. As all visitors to the garden must pass through this point, the view becomes highly exposed and is therefore experienced as far less calm and restorative than the image suggests.

During the on-site visit, both evaluators noted several aspects and objects in the landscape that were not visible or present in the photograph. These included a wall and a hill in the background that were not apparent in the image, as well as work equipment that was not in the photograph. There was also a major difference between the image and on-site experience regarding the number of people present. The photographs showed no visitors, but on-site the place was crowded for most of the visit.

Another clear difference between image and on-site concerned sounds. In the image-based evaluation, both evaluators could not identify any potential disturbing noise sources. On-site however it was clear that people were a major source of disturbing noise. There was also ongoing work at the site which negatively affected the experience. Light, shade, and weather conditions also impacted the on-site experience. During the day of the evaluation the heat added to a feeling of discomfort and since parts of the body were exposed to sunlight there was a desire to seek more shade.

On the second day of the visit the experience was a bit different. The site felt considerably calmer, with fewer people present and overcast weather with rain in the air. Fewer people meant less disturbing noise which meant that it was easier to hear more contemplative sounds like birds and the sound of water from a nearby source. The fresher air and increased stillness and cooler temperature also contributed to a stronger sense of contemplation.

Table 5 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 5. Differences in scores between evaluators at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	3	3	3.0
Landform	3	2	2.5	4	5	4.5
Biodiversity	2	2	2.0	3	4	3.5
Color & Light	4	5	4.5	5	4	4.5
Compatibility	6	5	5.5	4	3	3.5
Archetypal Elements	6	2	4.0	6	3	4.5
Character of Peace & Silence	5	5	5.0	2	2	2.0
Average	*4.0*	*3.4*	*3.7*	*3.9*	*3.4*	*3.6*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	1	3	2.0
Average	*1.3*	*2.8*	*2.0*

As shown in Table 5, in the image-based evaluation, the evaluators assigned different scores in the category 'Layers of the Landscape', while in the on-site evaluation the scores differed in the category 'Biodiversity' . Scores in the characters 'Landform', 'Color & Light', 'Compatibility', and 'Archetypal Elements' also varied between the evaluators in both the image- based and on-site evaluations. A closer examination of these differences shows that, in

most cases, the score variations were relatively small. Overall, Evaluator 1 reported a higher average score than Evaluator 2 in both the image-based and on-site assessments. In the sensory evaluation, all category scores differed between the evaluators, with Evaluator 2 obtaining a higher average score.

Overall, there was a high level of consensus between the evaluators' experiences of the view. However, Evaluator 1 assigned a slightly higher average score than Evaluator 2, both in the image-based evaluation and during the on-site visit. Most differences in the evaluators' experiences were related to varying interpretations of the questions and categories within the model.

The largest difference concerned the experience of 'Archetypal Elements'. Both evaluators agreed that the formally trimmed hedges and the tall cypress trees on the hill were the most influential features of the view. However, their evaluations differed because they interpreted the category of 'Archetypal Elements' in different ways. Evaluator 2 did not consider any 'Archetypal Elements' to be present, whereas Evaluator 1 considered the archetype of "forest, path, and clearing," with the hedge and cypresses being part of this composition. As a result, Evaluator 1 assigned a high score in this category, while Evaluator 2 gave a low score. This difference suggests that certain aspects of the model may sometimes be difficult to interpret consistently, highlighting a challenge in achieving uniform evaluations.

Other differences between the evaluators were found in more specific questions. For instance, regarding whether equipment and built structures had natural colors, Evaluator 2 noted the presence of yellow and silver work equipment that stood out visually, something that Evaluator 1 did not mention. There was also variation in how the evaluators approached the question of chaos and clutter within the scene. Evaluator 1 included the presence of people as a disturbing factor, whereas Evaluator 2 focused primarily on built structures, commenting that work equipment and a barricade contributed to a sense of clutter.

There were also differences in the assessment of sharp angles and edges. Evaluator 1 answered “no” in the photo-based evaluation but reported “quite a lot” on-site, while Evaluator 2 responded “yes” in the photograph, but not much during the on-site visit.

Finally, the evaluators also differed in their perception of 'Biodiversity' . Evaluator 2 observed a relatively large number of plant species in the green background area on-site, whereas Evaluator 1 experienced the 'Biodiversity' as generally low.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 6 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 6. Differences between CLM and sensory evaluations at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	3	3	3.0
Landform	3	2	2.5	4	5	4.5
Biodiversity	2	2	2.0	3	4	3.5
Color & Light	4	5	4.5	5	4	4.5
Compatibility	6	5	5.5	4	3	3.5
Archetypal Elements	6	2	4.0	6	3	4.5
Character of Peace & Silence	5	5	5.0	2	2	2.0
Average	*4.0*	*3.4*	*3.7*	*3.9*	*3.4*	*3.6*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	1	3	2.0
Average	*1.3*	*2.8*	*2.0*

As seen in Table 6 Evaluator 1 had an average score of 3,86 on the CLM evaluation and a lower score of 1,25 on the sensory evaluation. Evaluator 2 had a score of 3,43 on the CLM evaluation and a lower score of 2,75 on the sensory evaluation. The group average score dropped from 3,64 on the CLM evaluation to 2,00 on the sensory evaluation.

Both evaluators commented that people were disturbing the experience of contemplation on-site, both visually and acoustically. Evaluator 1 reported that distractions from people in particular made it difficult to keep focus on the design of the space. Evaluator 1 also commented that smells from visitors also affected the experience on several occasions across different days. The same evaluator commented further that sound from water was a nice contribution to experience on-site.

Even though people were disturbing the experience, Evaluator 2 was able to keep more focus on the design of the space. The evaluator noted that the vegetation helped draw the gaze upward, which was positive for the experience of contemplation. The evaluator also reported that hearing water and some bird sounds, in addition with sunlight and time of day influenced the experience. Passing by the site earlier in the day the bench used for the evaluation had been fully exposed to the sun, whereas during the inventory at least parts of the body were in shade. Sitting there earlier in the day would have been uncomfortably hot, disturbing the experience even further. Evaluator 2 further noted that the view on-site had greater depth than in the photograph, and that additional elements became visible, altering the overall experience of the place.

On the sensory evaluation Evaluator 1 generally assigned low scores, with an average of 1.25. Evaluator 2 gave slightly higher scores but still rather low, with an average of 2,75. The combined group average score ended up on 2.0, indicating that both evaluators were strongly disturbed by the presence of people. This aligns with evaluators' qualitative observations. While the extent to which people are disturbing may vary between individuals, this evaluation is a good example of how a high number of visitors on a site significantly affects the senses and reduces the contemplative experience.

3.1.2 View 2 - The “Hidden Fountain” in the Lower Garden

Image view **On-site view**

Figure 21. The “Hidden Fountain” in the Lower Garden: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Rushikeshapte (2014), Wikimedia Commons, CC BY-SA 3.0.

Description of the View

The particular fountain found at View 2, does not appear to have an official historical name. It is located in the New Garden, also known as the Lower Garden (Figure 19; Figure 21), which was developed during the twentieth century (Alhambra-Palace.org, n.d.). In this part of the garden, water features and fountains are integrated into the terrace structure which plays an important role in shaping the garden’s overall sensory character (ibid.).

The fountain is partly framed by tall cypress trees, which gives the space a sense of enclosure and discovery. The structure contains four rectangular openings, adding to its intrigue and giving the space a sense of mystery. It is a place that invites curiosity, but at the same time it feels uncomfortable to stay for long, since there are many people that want access to it.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 2 can be found in Table 7. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of evaluators 1 and 2.

Table 7. CLM and sensory scores at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	4	4.5	4	5	4.5
Landform	4	2	3.0	3	3	3.0
Biodiversity	3	2	2.5	4	4	4.0
Color & Light	5	6	5.5	6	5	5.5
Compatibility	5	6	5.5	5	6	5.5
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	4	3	3.5
Average	*4.9*	*4.6*	*4.7*	*4.6*	*4.6*	*4.6*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	3	3.5
Hearing (auditory)	3	3	3.0
Smell (olfactory)	4	5	4.5
Touch (tactile)	3	2	2.5
Average	*3.5*	*3.3*	*3.4*

Differences Between Using Image-Based and On-Site Evaluations

Table 8 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 8. Differences in scores between image-based and on-site evaluations at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	4	4.5	4	5	4.5
Landform	4	2	3.0	3	3	3.0
Biodiversity	3	2	2.5	4	4	4.0
Color & Light	5	6	5.5	6	5	5.5
Compatibility	5	6	5.5	5	6	5.5
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	4	3	3.5
Average	*4.9*	*4.6*	*4.7*	*4.6*	*4.6*	*4.6*

As shown in Table 8, both evaluators changed scores between image and on-site in all characters except 'Compatibility' and 'Archetypal Elements'. Together the group average scores are the same except for the characters 'Biodiversity' and 'Character of Peace & Silence'. For Evaluator 1 the average score is higher on image compared to on-site and for Evaluator 2 average scores are the same. Combined, the group average was higher for image than on-site.

Similar to the previous view, a major difference was that on-site, large numbers of people created disturbance through sound and movement. Evaluator 2 commented that on-site the strongest sensation is the feeling of being in the way and wanting to move aside. This was not something that the evaluators predicted or experienced in any way during the photo evaluation. With fewer people, the site would likely have felt more contemplative. Heat and strong sunlight also negatively affected the experience, creating a desire for shade. The fountain sound partly masked disturbing noise, an effect that could not have been anticipated from the photograph. Another difference between image and on-site is that both evaluators reported that they saw more plant species on-site compared to

the image analysis. This was probably because they were able to see more details on-site compared to the image. Both evaluators also noted that there were no animals visible in the image. However, during the on-site visit, Evaluator 2 observed dragonflies, which Evaluator 1 didn't notice. This points out that even if the evaluators are at the same place at the same time there can still be a difference in what is observed depending on the exact moment the evaluators observe the view. Even if both evaluators look at the view at the exact same time there could also be an individual difference between what they notice and pay attention to in a view.

Regarding the overall contemplative score, the view received a lower contemplative rating on-site than in the image, which seems reasonable. The on-site experience was strongly disturbed by the presence of other people and by the feeling of being in the way and the average CLM scores might therefore be a bit higher than what is reasonable.

Differences Between Evaluators

Table 9 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 9. Differences in scores between evaluators at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	4	4.5	4	5	4.5
Landform	4	2	3.0	3	3	3.0
Biodiversity	3	2	2.5	4	4	4.0
Color & Light	5	6	5.5	6	5	5.5
Compatibility	5	6	5.5	5	6	5.5
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	4	3	3.5
Average	*4.9*	*4.6*	4.7	*4.6*	*4.6*	4.6

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	3	3.5
Hearing (auditory)	3	3	3.0
Smell (olfactory)	4	5	4.5
Touch (tactile)	3	2	2.5
Average	*3.5*	*3.3*	*3.4*

As seen in Table 9, the evaluators' scores for the characters 'Layers of the Landscape', 'Color & Light', and 'Compatibility' have varied for both the image and on-site. For image, the scores for 'Landform' and 'Biodiversity' also differ between the evaluators and on-site, the score for 'Character of Peace & Silence' is different between them.

The average score for the image evaluation differs between the evaluators, while the score for the on-site experience is the same for both. In the sensory evaluation, the scores for all categories vary between the evaluators, except for hearing.

At this view there were generally few significant differences between the evaluators. One concerned whether the observer's eyes were automatically drawn to distant objects. Evaluator 1 answered yes, while Evaluator 2 answered no. Evaluator 1 felt that the eyes naturally wanted to follow the straight direction of the water channel towards the building in the distance, and that it was almost uncomfortable for the eyes to focus solely on the movement of the fountain's water. Evaluator 2 had a different opinion and stated that the fountain was the focal point and captured all attention.

Another difference was that Evaluator 2 found the sound of the water fountain on-site more disturbing for the senses than Evaluator 1. Evaluator 2 commented that the sound was so high that it was a bit disturbing, whereas Evaluator 1 experienced it positively.

Table 10 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 10. Differences between CLM and sensory evaluations at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	4	4.5	4	5	4.5
Landform	4	2	3.0	3	3	3.0
Biodiversity	3	2	2.5	4	4	4.0
Color & Light	5	6	5.5	6	5	5.5
Compatibility	5	6	5.5	5	6	5.5
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	4	3	3.5
Average	*4.9*	*4.6*	*4.7*	*4.6*	*4.6*	*4.6*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	3	3.5
Hearing (auditory)	3	3	3.0
Smell (olfactory)	4	5	4.5
Touch (tactile)	3	2	2.5
Average	*3.5*	*3.3*	*3.4*

As shown in Table 10, Evaluator 1 has an average score of 4,57 on the CLM evaluation and a lower score of 3,50 on the sensory evaluation. Evaluator 2 also has a score of 4,57 on the CLM evaluation and then a lower score of 3,25 on the sensory evaluation. The group average score drops from 4,57 on the CLM evaluation to 3,38 on the sensory evaluation. It is more evident in the sensory scores than in the CLM scores that the on-site experience is

disrupted by the presence of people. Since both evaluators' scores are below 3.83, the view falls under the category of low contemplation.

Although the view was visually appealing, the high average CLM score of 4.57 did not seem fully reasonable when reviewing the results. According to CLM's interpretation table, such a score would indicate a high level of contemplative quality and both evaluators agreed that this was not the case. Instead of feeling calm and restorative, the space was experienced more as a "crossroad," where a constant flow of visitors passed through, making it difficult to find moments of solitude or stillness.

Both evaluators commented on the intense heat, the lack of shade, and the absence of wind, all of which negatively affected the on-site experience. The most significant disturbances on-site were related to sight and hearing, as noise and movement from other people strongly disrupted the atmosphere. Since the environment itself holds a lot of contemplative potential the evaluators agreed that without the presence of people, the view probably would have felt very different.

There were also other factors which limited the possibility of contemplation. The evaluators were positioned on a narrow pathway or "bridge," which did not feel like a space intended for stopping or pausing. Evaluator 2 in particular described a strong sense of being in the way, as other people frequently approached to take photographs, creating stress and discomfort. On one occasion, the evaluator was even asked to move aside so others could take a picture. Evaluator 2 also expressed a feeling of vulnerability and concern about accidentally stepping back into the water.

Despite its strong visual qualities both evaluators generally experienced a low level of contemplation at this view. The continuous noise and movement of people, together with the discomfort of having to occupy a space that many people waited for the opportunity to get access to significantly reduced the view's contemplative quality.

During the other days on-site, both evaluators experienced a calmer atmosphere at times, mainly due to changes in weather, light, and the number of visitors. Increased cloud cover created softer light, less intense colors, and fresher air, making the view more pleasant. At times where there were fewer people present the space felt quieter and less stressful, with a stronger sense of peace and silence. Humid air made scents more noticeable, especially the floral fragrance of jasmine. Overall, the cooler weather and calmer surroundings contributed to a more relaxed and contemplative experience.

3.1.3 View 3 - Court of the Acequia

Image view **On-site view**

Figure 22. Court of the Acequia: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Rumomo (2018), Wikimedia Commons.

Description of the View

The Court of the Acequia, or Patio de la Acequia, is the central and most important part of the Generalife Palace (Figure 19; Figure 22). The courtyard measures approximately 48.7 meters in length and 12.8 meters in width (Alhambra- Palace.org, n.d.) Water, shade, and enclosure work together to create a calm and balanced atmosphere. Porticos and surrounding vegetation provide shelter from the sun, while the sound and movement of water support a sense of stillness and focused attention. The courtyard is organised around a long, narrow water channel that forms a clear central axis and structures the entire space. The channel is supplied by the Alhambra's historic irrigation system, and flowing water is a defining element of the courtyard's spatial and sensory character (Ruggles, 2008; Alhambra-Palace.org, n.d.).

The right side of the courtyard is defined by a long wall with eighteen arches, built around 1670, leading to a gallery and viewpoint (Alhambra-Palace.org, n.d.). The north pavilion includes a hall, portico, and tower with views over the garden, while the south pavilion, once the main entrance, is mostly in ruins (ibid.).

Although some architectural elements and planting have changed over time, the basic structure of the courtyard and its emphasis on axial order and water remain central to the experience of this space (Ruggles, 2008).

The Court of the Acequia was selected for this case study as it represents a highly formal and iconic example of contemplative landscape design within the Generalife Garden, where symmetry, water, and enclosure are combined to support reflection and calmness.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 3 can be found in Table 11.
This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of evaluators 1 and 2.

Table 11. CLM and sensory scores at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	4	3.5	2	5	3.5
Landform	2	2	2.0	3	3	3.0
Biodiversity	3	4	3.5	4	5	4.5
Color & Light	4	4	4.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	2	3	2.5
Average	*4.3*	*4.6*	*4.4*	*4.1*	*4.9*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	2	4	3
Average	*1.5*	*3.0*	*2.3*

Differences Between Using Image-Based and On-Site Evaluations

Table 12 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 12. Differences in scores between image-based and on-site evaluations at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	*3*	*4*	3.5	*2*	*5*	3.5
Landform	*2*	*2*	2.0	*3*	*3*	3.0
Biodiversity	*3*	*4*	3.5	*4*	*5*	4.5
Color & Light	*4*	*4*	4.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	*2*	*3*	2.5
Average	*4.3*	*4.6*	*4.4*	*4.1*	*4.9*	*4.5*

As shown in Table 12, both evaluators have changed their score on every category except 'Compatibility' and 'Archetypal Elements'. The group average scores are different in every category except 'Layers of the Landscape',

'Compatibility' and 'Archetypal Elements'. For Evaluator 1 the average score is higher on image compared to on-site. The average scores for Evaluator 2 are the opposite, higher on-site compared to image. Combined the group average score is higher on-site than on image.

It is surprising that scores were not more different between image and on-site evaluations, given the significantly different overall experience. On-site, large numbers of people, along with their sounds and movements, negatively affected the experience. People often blocked views and caused disturbance, unlike in the image. In contrast, water movement positively enhanced the on-site experience, while shifting light created a more immersive atmosphere.

Being on-site engaged more senses than the image analysis could provide. Smells, wind, and changes in air temperature all influenced the experience, creating a stronger sensory presence. It was also possible to observe far more details on-site than in the image. More details were also visible, such as flowers, wall symbols, and patterns. Evaluator 2 noticed an important sightline through an open door in the building at the back of the view, something that was not visible in the image. Additionally, animals such as butterflies were present on-site, which were not captured in the photograph. A round fountain located directly at the evaluators' feet was also visible on-site, but was not included in the image. Evaluator 2 further noted that the narrow paths running alongside the space could feel uncomfortable, a sensation that was not predicted during the image analysis.

Regarding understanding the place, whether there is a visual or physical division between the green space and busy urban space was difficult to answer in the image analysis. The image did not provide any information about the proximity to an urban context. It became clear that while doing the image analysis, it can be very difficult to draw any kind of conclusions about the surrounding environment.

Another difference between the image and the on-site experience concerned what drew the most attention. In the image, both evaluators

experienced that their gaze was automatically drawn toward the building in the background. On-site, however, the water element attracted the most attention. Water movement likely increased its sensory impact, particularly for sight and hearing. In terms of the category 'Color & Light', both evaluators experienced a higher level of contemplation on-site compared to the image analysis. However, the scores for the category 'Character of Peace & Silence' dropped dramatically from image to on-site evaluation. This was mainly due to the disturbance caused by people on-site. Evaluator 2 also felt that the sound level of the water was a bit disturbing after a while.

During a second visit on-site, the experience changed slightly. The light was softer than on the previous day, and the air felt cooler and fresher. There were also more people present, resulting in increased noise. Evaluator 2 felt more tired during this visit and found it even harder to reach a contemplative state. She also perceived the noise from people as even more disturbing than during the first visit.

Differences Between Evaluators

Table 13 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 13. Differences in scores between evaluators at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	4	3.5	2	5	3.5
Landform	2	2	2.0	3	3	3.0
Biodiversity	3	4	3.5	4	5	4.5
Color & Light	4	4	4.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	2	3	2.5
Average	*4.3*	*4.6*	*4.4*	*4.1*	*4.9*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	2	4	3
Average	*1.5*	*3.0*	*2.3*

As shown in Table 13 the scores for the characters 'Layers of the Landscape' and 'Biodiversity' changed among the evaluators for both the image and on-site evaluation. The category 'Character of Peace & Silence' also changed between the evaluators on-site. The rest of the characters remained the same between the evaluators. The average scores differed for both the image and the on-site evaluation. Evaluator 2 had a higher average score for both the image and the on-site evaluation. For the sensory evaluation, all categories changed between evaluators, with Evaluator 2 achieving a higher average score.

During the on-site observation Evaluator 2 noticed the view through the open door in the building located in the background. This was hard to see since it was far away and for the most part people were standing in the way of the doorway, blocking the view. Therefore Evaluator 1 did not notice it or perceive it as part of the background layer. Instead the building was interpreted as a visual barrier obstructing the view beyond. Because of this, in the category 'Layers of the Landscape', Evaluator 2 gave a score of 5 and Evaluator 1 gave a score of 2 .

Another difference between the evaluators can be found in the response to the question ´*Is there chaos and clutter within the scene?*´, Evaluator 1 counted people as chaos and clutter, whereas Evaluator 2 only focused on the built environment. Regarding the question of whether the space feels intimate and secure, Evaluator 2 also focused on whether the design itself

evokes these feelings, while Evaluator 1 also considered the impact that people had on the space's sense of intimacy and security.

On the question of whether there is a visual or physical division between the green space and the busy urban environment, the evaluators reached different conclusions despite having similar observations. Evaluator 1 answered “no,” arguing that the urban space is located far away and therefore does not have a noticeable impact on the view. Evaluator 2, however, answered “yes,” and considered the view to be separated from the urban environment, both by distance and by the surrounding walls, which shield the space from its surroundings. This indicates that this is a question that can be difficult to interpret. If the urban environment is located far away, it becomes unclear whether the view should be considered separated from the urban space or simply unaffected by it.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 14 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 14. Differences between CLM and sensory evaluations at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	4	3.5	2	5	3.5
Landform	2	2	2.0	3	3	3.0
Biodiversity	3	4	3.5	4	5	4.5
Color & Light	4	4	4.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	6	6.0	6	6	6.0
Character of Peace & Silence	6	6	6.0	2	3	2.5
Average	*4.3*	*4.6*	*4.4*	*4.1*	*4.9*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	1	3	2
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	3	2.5
Touch (tactile)	2	4	3
Average	*1.5*	*3.0*	*2.3*

As shown in Table 14, Evaluator 1 has an average score of 4,14 on the CLM evaluation and a lower score of 1,5 on the sensory evaluation. Evaluator 2 has a score of 4,86 on the CLM evaluation and a lower score of 2,25 on the sensory evaluation. The group average score drops from 4,50 on the CLM evaluation to 2,25 on the sensory evaluation.

According to CML's "Interpret the Score", any score above 4.33 indicates a high level of contemplative quality, while scores below 3.83 suggest low contemplation. The sensory evaluation of the view resulted in an average score of 2.25, which is significantly lower than the average CML score of 4.50. Both evaluators argue that the sensory score better reflects the overall on-site experience. The view has the potential to support a high level of contemplation, and during times of the site visits the view can indeed be experienced as highly contemplative. However, there is a large difference between the photo-based- and the on-site evaluation. Both evaluators pointed out that the experience on-site is often disrupted by sensory disturbances, mainly in the form of movement and noise from other people. While both evaluators also agreed that the sound of the fountain is generally pleasant and helps to mask some of the ambient noise, its volume can also make it difficult at times to achieve a state of calm and stillness.

The disturbances on-site reduced the actual sense of contemplation and prevented the experience from fully aligning with the high CML score.

3.1.4 View 4 - Court of the Sultana

Image view **On-site view**

Figure 23. Court of the Sultana: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Bale, J. (2012).

Description of the View

View 4 is located within the Generalife Palace and is known as the Court of the Sultana's Cypress Tree or just Court of the Sultana (Figure 19; Figure 23). The view consists of an enclosed room with a U-shaped water basin in the middle of the space framed by myrtle hedges and shaded by cypress trees. Although the courtyard is not part of the original Nasrid garden layout, it was created in the sixteenth century and later integrated into the Generalife Garden (Ruggles, 2008).

The site is historically associated with a former palace bath, which no longer exists (Alhambra-Palace.org, n.d.). The courtyard takes its name from an ancient cypress tree and is linked to a local legend, which contributes to the symbolic and atmospheric character of the space (ibid.). The enclosed form, shade, and still water create a quiet and intimate atmosphere, different from the more open and movement-oriented areas of the Lower Garden.

Movement around the water element is somewhat restricted, as one side is blocked off. Compared to other areas of the garden, the design feels simpler, and plantings less elaborate.

The view was selected for this study because it represents a sheltered and inward-focused contemplative space, where calmness and reflection are supported through enclosure, shade, and subtle sensory qualities.

During the on-site evaluation, evaluators were seated on a bench beneath an arcade offering shelter from rain and strong sunlight. On the right side, a staircase generated substantial movement, while an exit at the far end created a constant flow of visitors. On-site, a dead tree leaning over the space was visible but absent in the photograph. A key difference was that the fountain was active during the on-site visit, while it appeared turned off in the photograph.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 4 can be found in Table 15. This includes the image and the on-site evaluations, as well as the sensory evaluation. The group average scores represent the combined scores of Evaluator 1 and 2.

Table 15. CLM and sensory scores at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	1	2	1.5	3	3	3.0
Landform	2	3	2.5	3	3	3.0
Biodiversity	3	2	2.5	3	4	3.5
Color & Light	5	6	5.5	5	5	5.0
Compatibility	5	5	5.0	3	5	4.0
Archetypal Elements	6	3	4.5	6	6	6.0
Character of Peace & Silence	6	6	6.0	3	4	3.5
Average	*4.0*	*3.9*	*3.9*	*3.7*	*4.3*	*4.0*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	4	3.0
Hearing (auditory)	2	4	3.0
Smell (olfactory)	1	3	2.0
Touch (tactile)	1	4	2.5
Average	*1.5*	*3.8*	*2.6*

Differences Between Using Image-Based and On-Site Evaluations

Table 16 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 16. Differences in scores between image-based and on-site evaluations at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	1	2	1.5	3	3	3.0
Landform	2	3	2.5	3	3	3.0
Biodiversity	3	2	2.5	3	4	3.5
Color & Light	5	6	5.5	5	5	5.0
Compatibility	5	5	5.0	3	5	4.0
Archetypal Elements	6	3	4.5	6	6	6.0
Character of Peace & Silence	6	6	6.0	3	4	3.5
Average	*4.0*	*3.9*	*3.9*	*3.7*	*4.3*	*4.0*

As shown in Table 16 both evaluators changed the scores between image and on-site on the characters 'Layers of the Landscape' and 'Character of Peace & Silence'. Evaluator 1 also changed the scores on the characters 'Landform' and 'Compatibility'. Evaluator 2 on the other hand changed the

scores on the characters 'Biodiversity', 'Color & Light' and 'Archetypal Elements'. On the group average the scores were different between image and on-site on all of the categories. For Evaluator 1 the average score was higher on image compared to on-site. The average scores for Evaluator 2 were the opposite, lower on image compared to on-site. Together the group average scores were lower on image compared to on-site.

Similarly to the experience from the other views in the garden, the on-site visits provided far more contextual and sensory information than the photograph alone. While no people were visible in the image, on-site the view was crowded. The movement and noise of people had a strong influence on the experience and created a clear contrast to the image-based analysis. The constant activity disrupted any sense of stillness, reflecting a recurring theme across the Generalife Garden views.

Something unique to this view however, was that the group's average scores were higher on-site than on the image-based evaluation. Despite the presence of people, Evaluator 2 perceived that people were less disruptive here than at many of the other locations.

The water element also significantly shaped the on-site experience. A major difference was that the fountain was active during the visit, adding movement and sound. In the photograph, water was less visible, reducing its importance for Evaluator 2. On-site, evaluators observed more details absent from the image, including additional vegetation inside and beyond surrounding walls. A dead tree leaning over the space was also visible in person but absent from the photograph. Evaluator 2 further observed birds and wasps, noting that images capture only a single moment, making wildlife presence difficult to assess. This highlights a limitation of solely image-based CLM evaluations

Another difference between the photograph and the on-site experience concerned the perception of landscape layers. Both evaluators reported stronger and more noticeable layers on-site, where background trees appeared more prominent and the spatial framing felt richer. At the same

time, Evaluator 1 experienced the layout as somewhat confining, noting that the stone wall and staircase were positioned very close to the fountain, creating a pressing sensation. The presence of staircases also introduced the possibility of sudden interruptions from passing visitors, which could further interfere with contemplative experience.

Differences Between Evaluators

Table 17 shows differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 17. Differences in scores between evaluators at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	1	2	1.5	3	3	3.0
Landform	2	3	2.5	3	3	3.0
Biodiversity	3	2	2.5	3	4	3.5
Color & Light	5	6	5.5	5	5	5.0
Compatibility	5	5	5.0	3	5	4.0
Archetypal Elements	6	3	4.5	6	6	6.0
Character of Peace & Silence	6	6	6.0	3	4	3.5
Average	*4.0*	*3.9*	3.9	*3.7*	*4.3*	*4.0*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	4	3.0
Hearing (auditory)	2	4	3.0
Smell (olfactory)	1	3	2.0
Touch (tactile)	1	4	2.5
Average	*1.5*	*3.8*	2.6

As shown in Table 17 on both image and on-site the evaluators scores differed on the category 'Biodiversity'. The evaluators also answered differently, on image, on the characters 'Layers of the Landscape', 'Landform', 'Color & Light' and 'Archetypal Elements'. On-site however the evaluators answered differently on the characters 'Compatibility' and 'Character of Peace & Silence'. On the sensory evaluation the evaluators assigned different scores to all of the senses.

This view was the one in the Generalife Garden where the evaluators' experiences differed the most. In the image-based evaluation, Evaluator 1 rated the view as more contemplative than Evaluator 2, whereas the on-site evaluation resulted in the opposite, with Evaluator 2 experiencing slightly greater opportunities for contemplation. Evaluator 1 was generally more disturbed by the presence and movement of people on-site, while Evaluator 2 perceived visitors as less disruptive here compared to other locations in the garden.

Several factors may help explain these differences. Firstly the evaluations at this view were not conducted at the exact same moment, meaning that crowd levels and atmosphere may have varied. The evaluators also moved through the space differently before sitting down, and their experiences may have been influenced by differing states of mind or personal preferences regarding spatial design. For instance, Evaluator 1 experienced the space as somewhat cramped and confining, an impression that Evaluator 2 did not share.

Another key difference in the evaluators' experiences concerned the central water element. On-site, both evaluators agreed that it had an important and positive impact on the atmosphere. In the photograph, however, their interpretations differed. Evaluator 1 described the water element as dominant and meaningful even though the fountain was not running, noting that the framing created by the stone wall and the hedge gave it an almost protected or sacred character. Evaluator 2, on the other hand, found the water feature difficult to understand in the image and was even

uncertain whether it was a fountain at all. Since the water was not visible, Evaluator 2 considered it less significant in the photo-based evaluation.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 18 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 18. Differences between CLM and sensory evaluations at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	1	2	1.5	3	3	3.0
Landform	2	3	2.5	3	3	3.0
Biodiversity	3	2	2.5	3	4	3.5
Color & Light	5	6	5.5	5	5	5.0
Compatibility	5	5	5.0	3	5	4.0
Archetypal Elements	6	3	4.5	6	6	6.0
Character of Peace & Silence	6	6	6.0	3	4	3.5
Average	*4.0*	*3.9*	*3.9*	*3.7*	*4.3*	*4.0*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	4	3.0
Hearing (auditory)	2	4	3.0
Smell (olfactory)	1	3	2.0
Touch (tactile)	1	4	2.5
Average	*1.5*	*3.8*	*2.6*

As seen in Table 18, Evaluator 1 has an average score of 3,71 on the CLM evaluation and a lower score of 1,50 on the sensory evaluation. Evaluator 2 has a score of 4,29 on the CLM evaluation and a lower score of 3,75 on the sensory

evaluation. The group average score drops from 4,00 on the CLM evaluation to 2,63 on the sensory evaluation.

Looking at the scores, there is a significant difference between the evaluators. Evaluator 1 reported an overall score of 1.5, while Evaluator 2 scored the view at 3.75. Combined, the evaluators' average score was 2.6, indicating that the senses were strongly disturbed on-site and that the contemplative experience was therefore relatively low (low contemplation < 3.83). This reflects the on-site experience quite well. A similar pattern can also be seen in the CLM scores, where Evaluator 1 rated the view as having low contemplative quality, while Evaluator 2 perceived a somewhat greater potential for contemplation, placing the view within the "average" range.

In general, Evaluator 1 was more disturbed by people's movement on-site than Evaluator 2. Evaluator 2 noted that it was positive that benches were placed with large pots on either side, providing some separation from visitors. Both evaluators agreed that sight and hearing were the most affected senses due to the presence of people. Evaluator 1 commented that sound tended to echo off the surrounding walls, and both evaluators noted that in addition to noise from visitors, the relatively loud water feature also contributed to the sensory disturbance to some extent.

3.2 The Calouste Gulbenkian Garden

The Calouste Gulbenkian Garden is located in Lisbon, the capital of Portugal, within a dense urban area north of the historic city centre. The garden is part of the Calouste Gulbenkian Foundation and surrounds the museum and cultural buildings on the site. Despite its central location, the garden functions as a calm and sheltered green space, maybe even a "green escape", offering opportunities for everyday contact with nature, rest and restoration (Calouste Gulbenkian Foundation, n.d.b). It is clearly separated from the surrounding traffic and urban activity.

The garden was designed in the 1960s, between 1963 - 1969, by the landscape architects Gonçalo Ribeiro Telles (1922-2020) and António Viana Barreto (1924-2012) , in collaboration with other professionals involved in the development of the park and its adjoining buildings (Calouste Gulbenkian Foundation, n.d.a; Calouste Gulbenkian Foundation, n.d.b). Since its construction, the garden has undergone several renovations and changes, and is today considered one of the most iconic modernist gardens in Portugal (Calouste Gulbenkian Foundation, n.d.b) Instead of formal flowerbeds and straight paths, the park design today focuses on natural forms and topography with varied spatial sequences with glades and edges, which creates atmospheric micro-landscapes within the larger park structure (Calouste Gulbenkian Foundation, n.d.a; Calouste Gulbenkian Foundation, n.d.b). The park is generally perceived as well balanced and gives a feeling of ”room within a room”. Lawns, trees, water features and gently curving paths are combined to support movement, rest, and visual connection between indoor and outdoor spaces. These spatial qualities are particularly relevant in relation to the CLM.

In contrast to the historically symbolic and enclosed character in the Generalife Garden, the Gulbenkian Garden represents a more contemporary approach to landscape design, with a strong connection between nature and man (Calouste Gulbenkian Foundation, n.d.a). The design has its roots grounded in ecological thinking and and in the idea of nature as a calming and restorative environment that supports mental well-being through contact with greenery, water and wildlife (ibid.). These qualities can be understood in relation to biophilic design. Although the garden was created before both the biophilia hypothesis written in the book “Biophilia“ by Edward O. Wilson (1984) and the 14 Patterns of Biophilic Design by Browning, Ryan & Clancy (2014), which was partly inspired by the earlier theoretical framework by Kellert, Heerwagen & Mador (2008), the Gulbenkian garden can be understood as an early practical example of biophilic principles. However, it should be noted that the integration of architecture and vegetation to enhance human well-being can be seen as far back in history

as the Hanging Gardens of Babylon, which were most likely built around 600 BC (Wikipedia, 2025).

Water plays an important role in the sensory experience of the Gulbenkian Garden. Streams, ponds, lakes and other water elements contribute to sound, movement, reflection and cooling, while vegetation provides shade, biodiversity, and seasonal variation (Calouste Gulbenkian Foundation, n.d.a). The garden offers both quiet areas for sitting and walking, as well as more open areas with longer sightlines across the landscape. From a CLM evaluation perspective, these features are central.

For this study, the newer southern part of the Gulbenkian Garden was selected for the CLM evaluation. The extension was designed by landscape architect Vladimir Djurovic (VDLA) in collaboration with Kengo Kuma & Associates as part of a broader redevelopment of the museum grounds (KKAA, n.d.; World Landscape Architect, 2025). The locations of the selected study views within the garden are illustrated in Figure 24. This southern part was developed as a natural continuation of the original garden, strengthening ecological continuity and creating a space for wildlife as well as multisensory experiences of nature while remaining integrated within the urban fabric (Calouste Gulbenkian Foundation, n.d.c).

The design of the southern extension emphasises dense vegetation, reflective water elements and varied spatial sequences, forming what has been described as an “urban forest” that supports biodiversity and multisensory engagement (KKAA, n.d.; Landezine, 2025; World Landscape Architect, 2025). Through its curved and rounded forms, naturalistic plantings, water elements, layered spaces and integration with architecture, this part of the garden represents qualities that are relevant for applying the Contemplative Landscape Model.

The following section presents the selected views within the Gulbenkian Garden and the results from the evaluations.

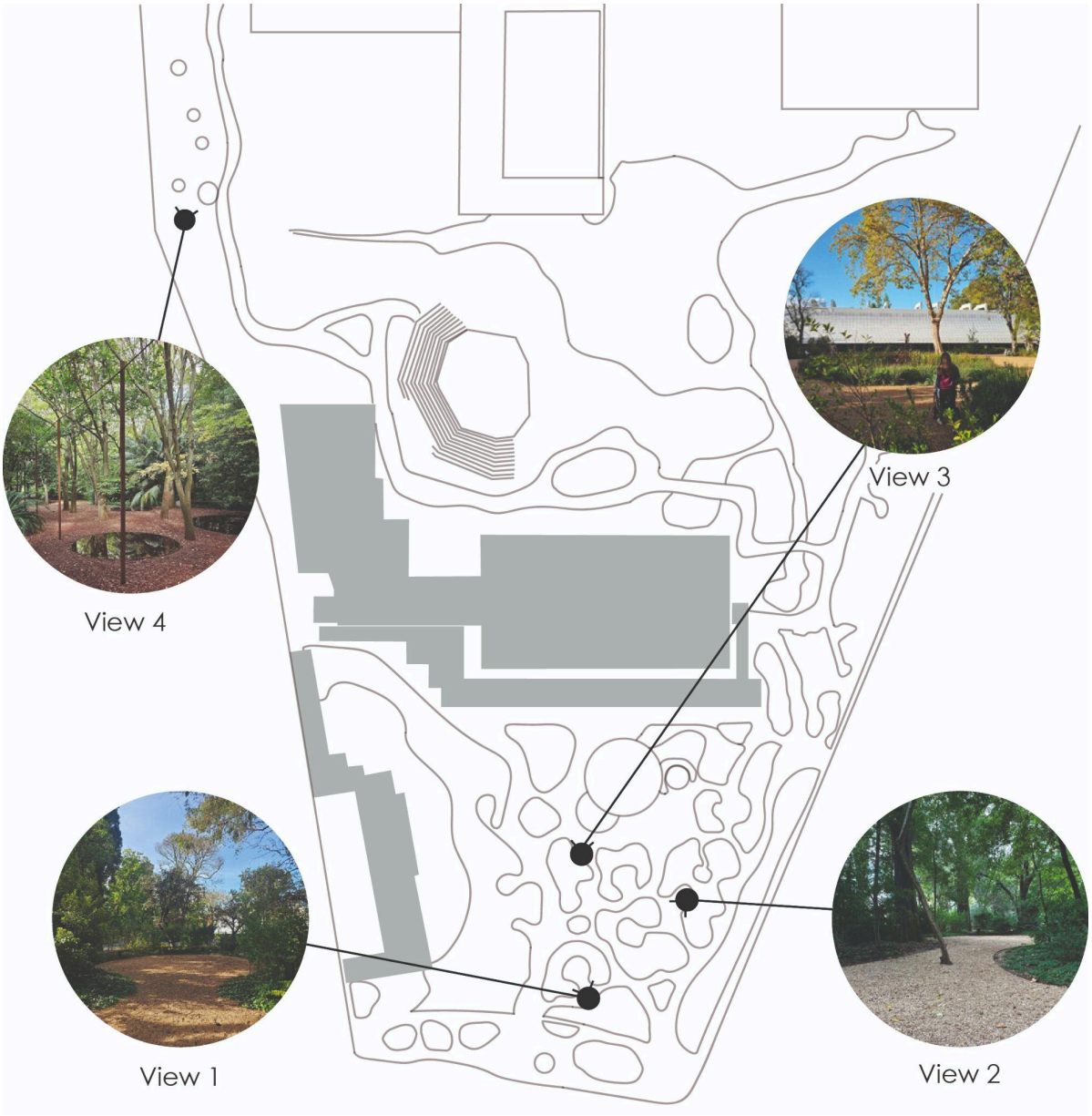

Figure 24. Overview map of selected study views in the Gulbenkian Garden
The map is schematically drawn for orientation purposes only; inaccuracies in proportions and exact positions may occur.

3.2.1 View 1 - Circular Solitude at the South Entrance

Image view **On-site view**

Figure 25. Circular Solitude at the South Entrance: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Fernando Guerra via Landezine (n.d.).

Description of the View

View 1 is located at the southern tip of the Gulbenkian Garden extension (Figure 24; Figure 25). This space serves as a transition area between the urban environment and the park's interior landscape. Despite this the view is still experienced as a relatively intimate, semi-enclosed space with a strong sense of privacy. Its circular form, modest material palette, and surrounding

tree canopy contribute to an atmosphere of solitude and retreat, drawing attention toward the center and encouraging inward focus. When occupied, the space can feel as though it temporarily “belongs” to the person already seated there, creating an unspoken boundary that discourages others from entering. This contributes to a distinctive sense of personal refuge within an otherwise public environment. At the same time, proximity to a major roadway means that traffic noise, including cars and occasional aircraft, challenges the experience of solitude and influences the overall sensory character of the view. The view was designed as part of the Gulbenkian Garden extension to function as a natural continuation of the original garden while strengthening ecological continuity, biodiversity, and restorative urban nature experiences (Calouste Gulbenkian Foundation, n.d.c; World Landscape Architect, 2025).

CLM- and Sensory Scores

Scores from the CLM evaluation at view 1 can be found in Table 19. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of Evaluator 1 and 2.

Table 19. CLM and sensory scores at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	2	3.5	4	2	3.0
Landform	5	2	3.5	4	2	3.0
Biodiversity	4	4	4.0	4	5	4.5
Color & Light	5	6	5.5	6	5	5.5
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	5	5.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*5.3*	*4.3*	*4.8*	*4.7*	*3.9*	*4.3*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	5	3	4.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	5	3.5
Touch (tactile)	3	5	4.0
Average	*2.8*	*3.8*	*3.3*

Differences Between Using Image-Based and On-Site Evaluations

Table 20 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 20. Differences in scores between image-based and on-site evaluations at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	2	3.5	4	2	3.0
Landform	5	2	3.5	4	2	3.0
Biodiversity	4	4	4.0	4	5	4.5
Color & Light	5	6	5.5	6	5	5.5
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	5	5.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*5.3*	*4.3*	*4.8*	*4.7*	*3.9*	*4.3*

As shown in Table 20, both evaluators changed the scores between image and on-site in the characters 'Color & Light' and 'Character of Peace & Silence'. Evaluator 1 also changed the score in the characters 'Layers of the Landscape'

and 'Landform' and Evaluator 2 also changed the score in the category 'Biodiversity'. For both Evaluator 1 and 2 the average scores are higher on image compared to on-site.

Overall, the biggest difference between the image-based impression and the on-site experience was the level of sensory disturbance. The on-site experience was highly affected by the view's location near entrances, roads, and surrounding urban movement. Although no vehicles were visible within the space itself, traffic noise and activity nearby had a clear negative impact on the experience. There were also some people seated nearby who were speaking loudly, which further disturbed the experience. While the spatial form and inward focusing design was supportive of contemplation, the perceived sense of calm was significantly reduced.

In the image-based evaluation, the view also appeared to have strong contemplative potential, especially in relation to 'Color & Light'. On-site, however, this impression changed due to different lighting conditions and contextual factors. The photograph appeared somewhat overexposed, creating a softer and more idealized atmosphere than what was actually experienced during the on-site visit.

Human presence was mostly experienced in the background, with visitors passing along adjacent paths behind vegetation. Seating was perceived as inviting in both evaluations, but on-site the material qualities of the benches were not experienced as very comfortable on-site, particularly due to their cold metal surfaces.

Differences between Evaluators

Table 21 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 21. Differences in scores between evaluators at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	2	3.5	4	2	3.0
Landform	5	2	3.5	4	2	3.0
Biodiversity	4	4	4.0	4	5	4.5
Color & Light	5	6	5.5	6	5	5.5
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	5	5.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*5.3*	*4.3*	*4.8*	*4.7*	*3.9*	*4.3*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	5	3	4.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	5	3.5
Touch (tactile)	3	5	4.0
Average	*2.8*	*3.8*	*3.3*

As shown in Table 21, evaluator differences were relatively pronounced at this view, particularly in categories related to spatial interpretation and sensory perception.

In the image-based evaluation, scores differed in nearly all characters except 'Biodiversity' and 'Compatibility'. On-site, evaluator scores differed across all characters except 'Compatibility'. Differences were particularly notable in 'Layers of the Landscape', 'Landform', 'Color & Light', 'Archetypal Elements' and 'Character of Peace & Silence'. The main differences between the evaluators' experiences concerned how the background was interpreted in the image-based evaluation. Evaluator 1 answered that the background was visible and imagined that the strong backlight, which obscured the view,

could represent open sky or even water. Evaluator 2, however, focused on the fact that the background could not be clearly distinguished and therefore answered that it was not visible.

This difference in interpretation also influenced their assessments of the category 'Layers of the Landscape'. Evaluator 2 assigned a low score, reasoning that the unclear background in the photograph, and the limited visual depth provided through the vegetation on-site, did not add much to the perception of layered space. Evaluator 1, on the other hand, felt that the view extended further in the image and therefore gave a significantly higher score. Even though Evaluator 1 experienced notable differences on-site, the evaluator still perceived the space as containing multiple “rooms” or spatial layers, which contributed to a relatively high score also during the on-site visit.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 22 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 22. Differences between CLM and sensory evaluations at View 1

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	5	2	3.5	4	2	3.0
Landform	5	2	3.5	4	2	3.0
Biodiversity	4	4	4.0	4	5	4.5
Color & Light	5	6	5.5	6	5	5.5
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	5	5.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*5.3*	*4.3*	*4.8*	*4.7*	*3.9*	*4.3*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	5	3	4.0
Hearing (auditory)	1	2	1.5
Smell (olfactory)	2	5	3.5
Touch (tactile)	3	5	4.0
Average	*2.8*	*3.8*	*3.3*

As seen in Table 22, Evaluator 1 had an average score of 4,71 on the CLM evaluation and a lower score of 2,75 on the sensory evaluation. Evaluator 2 had a score of 3,86 on the CLM evaluation and a lower score of 3,75 on the sensory evaluation. The on-site CLM evaluation for the group resulted in an average score of 4.29, which decreased to 3.25 in the sensory evaluation. This reduction indicates a shift from relatively high moderate contemplative score to a low contemplative score when sensory conditions are taken into account.

Overall, the auditory conditions were the most influential factor shaping the on-site experience. Noise from traffic, aircrafts, and activity from the surrounding urban environment generally reduced the sense of peace and contemplation at the view. Although pleasant sounds such as birdsong and footsteps on gravel were also present, they were mostly overshadowed by louder and more disturbing sounds.

Visually, the view supported a strong sense of enclosure. Its circular form and surrounding vegetation created the feeling of being in a small, contained “bubble.” When one person sat within the circular seating area, the space felt as if it belonged to that individual, discouraging others from entering. Movement within the circle was experienced as more disruptive than movement along the surrounding paths behind the vegetation.

Smell and touch were generally experienced positively at the view. Plant scents and forest-like aromas contributed to the atmosphere, and the textures and materials at the view supported a positive bodily experience.

These sensory qualities enhanced the visit, but they could not fully compensate for the disturbing noise.

In summary, while the visual character of the view created a contemplative potential, the overall experience was limited by external sensory disturbances. The discrepancy between the image and on-site experience highlights how strongly surrounding urban influences can affect a view's perceived contemplative quality, especially when it is located so close to the urban edge.

3.2.2. View 2 - The Outdoor Livingroom

Image view **On-site view**

Figure 26. The Outdoor Living Room: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Fernando Guerra via Landezine (n.d.).

Description of the View

View 2, which is located in the mid-northern part of the southern apex, consists of a relatively flat, open space with gravel and a large circular pond placed at its center (Figure 24; Figure 26). Behind the pond is the renovated museum building, which was designed by Kengo Kuma & Associates (KKAA, n.d.). The museum's curvilinear roof (both curved and linear) forms a strong visual focal point (Agobay, n.d.) Dense planting creates a soft spatial enclosure, while the open gravel surface allows for flexible movement and informal seating (Landezine, 2025). The overall color palette is dominated by warm tones, with the curved silver roof providing the strongest visual contrast. Aromatic and medicinal herbs such as thyme, sage, and lavender, contribute positively to both the scent and character of the view. Both the vegetation and the presence of mature trees create a sense of a nature like environment, almost evoking a subtle woodland atmosphere.

On the right side, an older stone structure marked with the words “kissing booth” stands out, contrasting with the otherwise modern character of the surroundings. The many movable turquoise metal chairs, which were actively used during the visit, reinforce the impression of the view as a comfortable and inviting place to stay. The atmosphere on-site is generally calm and relaxed, which is a strong contrast to the more crowded and disruptive spaces in the Generalife Garden.

Together, these elements give the space the character of a green outdoor living room, where visitors can gather, rest and observe. The combination of reflective water, layered vegetation and integrated architecture creates a balanced composition of openness and enclosure. These spatial and sensory qualities make the view relevant for evaluating the Contemplative Landscape Model.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 2 can be found in Table 23. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of Evaluator 1 and 2.

Table 23. CLM and sensory scores at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	3	3.0	5	3	4.0
Landform	3	4	3.5	6	3	4.5
Biodiversity	4	4	4.0	5	4	4.5
Color & Light	5	5	5.0	6	4	5.0
Compatibility	5	6	5.5	6	5	5.5
Archetypal Elements	5	6	5.5	6	5	5.5
Character of Peace & Silence	5	4	4.5	5	4	4.5
Average	*4.3*	*4.6*	*4.4*	*5.6*	*4.0*	*4.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	6	5	5.5
Hearing (auditory)	1	3	2.0
Smell (olfactory)	6	5	5.5
Touch (tactile)	6	5	5.5
Average	*4,8*	*4.5*	*4.6*

Differences Between Using Image-Based and On-Site Evaluations

Table 24 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 24. Differences in scores between image-based and on-site evaluations at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	3	3.0	5	3	4.0
Landform	3	4	3.5	6	3	4.5
Biodiversity	4	4	4.0	5	4	4.5
Color & Light	5	5	5.0	6	4	5.0
Compatibility	5	6	5.5	6	5	5.5
Archetypal Elements	5	6	5.5	6	5	5.5
Character of Peace & Silence	5	4	4.5	5	4	4.5
Average	*4.3*	*4.6*	*4.4*	*5.6*	*4.0*	*4.8*

As shown in Table 24, both evaluators have changed the scores between image and on-site on the characters 'Landform', 'Color & Light', 'Compatibility' and 'Archetypal Elements'. Evaluator 1 also changed the scores on the characters 'Layers of the Landscape' and 'Biodiversity'. The group average scores differ between image and on-site on the characters 'Layers of the

Landscape', 'Landform' and 'Biodiversity'. For Evaluator 1 the average score is lower on image compared to on-site. The average scores for Evaluator 2 are the opposite and higher on image compared to on-site. Together the group average scores are lower on image compared to on-site.

A strong impression during the on-site visit was the significance of the building's curved roof, which was not fully captured in the photograph. On-site, the roof made a much stronger impression, whereas in the image the focus was drawn more toward the middle ground. The flowing form of the roof created a clear visual direction toward the sky, allowing the gaze to drift upward without any clutter interrupting either sight or thought. In the photo-based evaluation, Evaluator 1 initially perceived the roof as partly blocking the view behind it. On-site, however, the roof was experienced less as an obstruction and more as framing and enclosing the space without diminishing the overall openness.

Several other qualities also became more clear through the on-site experience. The extent to which visitors could move chairs freely throughout the space was not apparent in the photograph, yet this flexibility played an important role in shaping the atmosphere. Likewise, the soundscape was impossible to assess from the image. On-site, birdsong, noise from airplanes and distant traffic contributed significantly to the sensory experience. The small stone building labeled "kissing booth" also gained a clearer role in person, as its presence and use were more easily understood than in the photograph.

Another notable difference concerned spatial perception. While both evaluators commented that there was a depth in the view in the photograph, they both also commented the opposite on-site. The perceived distance also changed considerably: in the image, the farthest objects were estimated to be around 60–70 meters away, whereas on-site they felt closer, approximately 30 meters. This highlights how the camera can distort the perception of distance and spatial scale.

The calm energy of the people present was another aspect that could not be predicted from the photograph. On-site, both evaluators described a sense that visitors occupied the space within invisible personal “bubbles,” quietly sharing the environment without disturbing one another. The movable chairs supported this feeling, giving each person the freedom to choose where to sit and creating an atmosphere of mutual acceptance and individual privacy.

Finally, tactile impressions on-site also played an important role. The gravel on the ground contributed strongly to the experience through both the sensation under the foot and the sound of footsteps, adding another layer of sensory richness that was not apparent in the photograph.

Differences Between Evaluators

Table 25 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 25. Differences in scores between evaluators at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	3	3.0	5	3	4.0
Landform	3	4	3.5	6	3	4.5
Biodiversity	4	4	4.0	5	4	4.5
Color & Light	5	5	5.0	6	4	5.0
Compatibility	5	6	5.5	6	5	5.5
Archetypal Elements	5	6	5.5	6	5	5.5
Character of Peace & Silence	5	4	4.5	5	4	4.5
Average	*4.3*	*4.6*	*4.4*	*5.6*	*4.0*	*4.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	6	5	5.5
Hearing (auditory)	1	3	2.0
Smell (olfactory)	6	5	5.5
Touch (tactile)	6	5	5.5
Average	*4.8*	*4.5*	*4.6*

As shown in Table 25, the scores are different between the evaluators on image on all the characters except 'Layers of the Landscape', 'Biodiversity' and 'Color & Light'. On-site the evaluators have put different scores on all of the characters. On the sensory evaluation the evaluators also gave different scores on all of the senses.

The biggest difference between the evaluators' experience of this view concerned their contrasting on-site perceptions of the curved roof in the background. Both acknowledged that the roof is a unique and distinctive design feature that contributes to the character of the space, but they responded to it in different ways.

Evaluator 2 appreciated the form of the roof and felt that it added value to the setting. However, the evaluator also noted that when sunlight hits the silvery metal surface, strong reflections occur that become visually disturbing. This negatively affected the overall experience on-site and made Evaluator 2 lower several category scores. Evaluator 1, in contrast, was not disturbed by the reflections at all and experienced the roof as a brilliant element that contributed only positively to the on-site experience. For this evaluator, the roof helped direct the gaze upward toward the sky and strengthened the spatial experience. As a result, Evaluator 1 raised their scores in several categories, and even considered the roof as part of the 'Landform' assessment, since it shaped the way the landscape was perceived on-site. In hindsight, the evaluator reflected that this may not fully align with how the CLM model is intended to be interpreted, but it felt like it was

important to include because of the roof's strong influence on the overall experience.

Another clear difference appeared in 'Color & Light'. Evaluator 2 felt the reflections disrupted visual harmony, while Evaluator 1 experienced on-site light and colors as more vivid and dynamic than in the photograph, enhancing sensory quality.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 26 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 26. Differences between CLM and sensory evaluations at View 2

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	3	3	3.0	5	3	4.0
Landform	3	4	3.5	6	3	4.5
Biodiversity	4	4	4.0	5	4	4.5
Color & Light	5	5	5.0	6	4	5.0
Compatibility	5	6	5.5	6	5	5.5
Archetypal Elements	5	6	5.5	6	5	5.5
Character of Peace & Silence	5	4	4.5	5	4	4.5
Average	*4.3*	*4.6*	*4.4*	*5.6*	*4.0*	*4.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	6	5	5.5
Hearing (auditory)	1	3	2.0
Smell (olfactory)	6	5	5.5
Touch (tactile)	6	5	5.5
Average	*4.8*	*4.5*	*4.6*

As shown in Table 26, Evaluator 1 has an average score of 5,57 on the CLM evaluation and a lower score of 4,75 on the sensory evaluation. Evaluator 2 has a score of 4,00 on the CLM evaluation and a higher score of 4,50 on the sensory evaluation. The group average score drops from 4,79 on the CLM evaluation to 4,63 on the sensory average.

Both evaluators generally experienced that the view had a positive impact on the senses. Visually, the space felt highly contemplative, with curved paths, and a rhythmic flow in the design. People were generally moving around quite slowly and the curved roof, reflecting the sky, played an important role in the experience.

The view also offered a rich sensory atmosphere through smell. Aromatic medicinal plants contributed to a fresh, natural air quality, although distant traffic noise occasionally triggered an awareness of the surrounding urban environment and the possibility of pollution. There were also some less pleasant scents present at times, such as cigarette or marijuana smoke.

One of the main disturbances was the distant background sound of traffic, as well as temporary loud noise from airplanes flying low to and from a nearby airport. Interestingly, despite these typical urban disruptions, the evaluators still rated and experienced the view as offering strong contemplative potential. The presence of quite large buffer zones between the garden space and the surrounding city helped soften these impacts, suggesting that even urban environments can support contemplation when designed effectively.

The soundscape also included some positive elements, such as footsteps on the gravel, the movement of leaves in the wind, and quiet, non disruptive conversations. Visitors generally appeared calm and relaxed, and their presence was far less disruptive than in the Generalife Garden, where crowds often interfered with contemplative experience. Here, it felt as though people came to rest and recover from the stress of the city outside the park, creating a highly comfortable social atmosphere.

Overall, vision was the sense that was most positively affected by the view, although Evaluator 2 noted that occasional reflections from the roof could slightly disturb the visual experience. The design was generally perceived as highly successful, and the view was experienced as a good example of a “green living room” within an urban setting and how contemplative experiences truly genuinely emerge even in the heart of a city.

Except for the design, the building also played another important role in the experience of the view. As a contemporary art museum with a café, shop, toilets, and staff, it added a sense of safety and comfort. It provided access to basic social needs while allowing visitors to quickly transition into the park’s biophilic atmosphere. Together, the cultural activity and the calming landscape created a rare and effective blend of urban life and restorative space.

3.2.3 View 3 - The Garden Pocket with the Free Running Trees

Image view **On-site view**

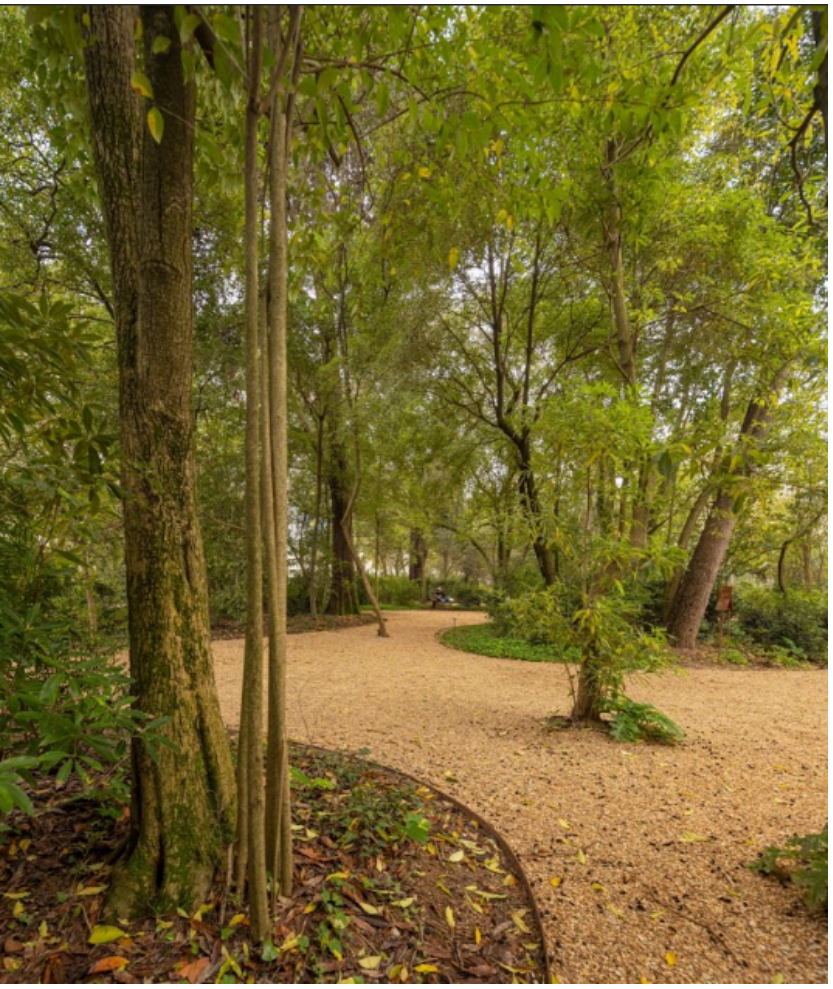

Figure 27. The Garden Pocket with the Free-Running Trees: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Fernando Guerra via Landezine (n.d.).

Description of the view

View 3 is situated within the southern extension of the Gulbenkian Garden (Figure 24; Figure 27). This part of the garden is designed as an urban forest system, intended to develop diverse ecological conditions and habitats that support both wildlife and human engagement (Calouste Gulbenkian Foundation, 2025). The view is characterised by the integration of existing

mature trees that influence the layout of paths and clearings. Some small trees also appear to have “escaped” out of the plantings into the gravel pathways. The trees, climbing vegetation and layered greenery at the view creates shaded, enclosed spaces that contrast with more open areas in the garden. They also create a jungle-like atmosphere with associations to a small urban forest. The spatial arrangement invites visitors to experience changing light, texture and sound as they move through the landscape (World Landscape Architect, 2025). The curved gravel walkways and their sharp, clearly defined edges are highly characteristic and give the view a strong visual structure.

The proximity to the museum architecture and the urban context contributes to a layered experience where landscape and built form interact. This interaction emphasises the continuity between garden and city while maintaining a series of intimate garden pockets and nature-oriented spaces that support reflection and sensory engagement.

While doing the on-site evaluations the view was a bit difficult to locate at first. The view did not naturally invite sitting or staying and the evaluators would not have actively chosen this location if they would have chosen contemplative spaces at the view. Instead, there was a recurring feeling that the specific view where the photo was taken was not intended for stopping and staying.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 3 can be found in Table 27. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of evaluators 1 and 2.

Table 27. CLM and sensory scores at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	2	1	1.5
Landform	3	4	3.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	5	5.5
Compatibility	5	6	5.5	6	4	5.0
Archetypal Elements	6	6	6.0	5	4	4.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*4.6*	*5.0*	*4.8*	*4.3*	*3.3*	*3.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	3	2.5
Hearing (auditory)	1	1	1.0
Smell (olfactory)	3	5	4.0
Touch (tactile)	3	4	3.5
Average	*2.3*	*3.3*	*2.8*

Differences between Using Image-Based and On-Site Evaluations

Table 28 shows where there are differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 28. Differences in scores between image-based and on-site evaluations at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	2	1	1.5
Landform	3	4	3.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	5	5.5
Compatibility	5	6	5.5	6	4	5.0
Archetypal Elements	6	6	6.0	5	4	4.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*4.6*	*5.0*	*4.8*	*4.3*	*3.3*	*3.8*

As shown in Table 28, Evaluator 1 changed the scores between image and on-site in the characters 'Biodiversity', 'Compatibility', 'Archetypal Elements' and 'Character of Peace & Silence'. Evaluator 2 changed scores in all characters except 'Biodiversity'. Across all characters the average scores were higher in the image-based evaluation than during the on-site visit. The group average scores differed between image and on-site in all of the characters.

Part of the explanation for the large difference between the image and on-site experience was a situation encountered on-site. At the time of the evaluation, the view was occupied by a temporary children’s art workshop (Figure 28). This required a slight relocation during the evaluation process which slightly altered and disturbed both the visual and sensory experience of the view.

This temporary occupation significantly influenced the contemplative experience by introducing additional movement, social activity, and disruption not visible in the original photographic representation.

Figure 28. Temporary occupation of View 3 during on-site evaluation

The selected evaluation site was partially occupied by a temporary children's art workshop during fieldwork, requiring relocation of the observation point. Source: Authors' own photograph (2025).

Perceptions of order and clutter clearly between evaluations. While the image suggested a calm and organized environment, the on-site experience included visible activity and movement, which contributed to a sense of disorder.

Another difference between image and on-site concerned perceived distance. In the image-based evaluation, background elements appeared significantly farther away than they were experienced on-site, resulting in lower distance-related scores during the on-site evaluation.

'Landform' was also rated lower on-site, as the terrain appeared relatively flat compared to the more dynamic curves suggested by the image. 'Archetypal Elements' were also perceived as less significant on-site, likely because attention was drawn to ongoing activities and disturbances rather than symbolic or spatial qualities.

Human presence and traffic further contributed to differences between evaluations. While the image-based evaluation showed no visible people or vehicles, the on-site experience included both visible human activity and audible traffic not far away. Noise sources on-site were predominantly artificial, consisting mainly of road traffic and aircrafts, with human activity adding to the disturbance.

Overall, the image-based evaluation suggested moderate contemplative potential, whereas the on-site evaluation revealed a substantially lower contemplative quality. This shift was primarily driven by sensory disturbances, particularly sound, and by situational factors not captured in the photograph.

Differences between Evaluators

Table 29 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 29. Differences in scores between evaluators at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	2	1	1.5
Landform	3	4	3.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	5	5.5
Compatibility	5	6	5.5	6	4	5.0
Archetypal Elements	6	6	6.0	5	4	4.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*4.6*	*5.0*	*4.8*	*4.3*	*3.3*	*3.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	3	2.5
Hearing (auditory)	1	1	1.0
Smell (olfactory)	3	5	4.0
Touch (tactile)	3	4	3.5
Average	*2.3*	*3.3*	*2.8*

As shown in Table 29, the scores between the evaluators in the image-based evaluation, differed in all characters except 'Color & Light' and 'Archetypal Elements'. On-site, they differed in all characters except 'Biodiversity'. In the sensory evaluation, differences occurred across all senses except Hearing. The most notable differences between evaluators occurred in the characters 'Layers of the Landscape', 'Landform', 'Compatibility' and 'Character of Peace & Silence'.

Overall, one evaluator tended to assign lower on-site scores than the other, contributing to a lower individual average. These differences reflect variations in interpretations and experience but do not alter the overall pattern of lower contemplative quality on-site compared to the image-based evaluation.

Even though the evaluators assigned different scores in a lot of the characters there are not any significant differences between their answers from the image and on-site evaluations. This indicates that the evaluators experienced similar things at this view but how much it impacted their experience differed a bit between them.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 30 shows where there are differences in scores between the CLM evaluation and the Sensory evaluation.

Table 30. Differences in scores between the CLM evaluation and sensory evaluation at View 3

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	3	2.5	2	1	1.5
Landform	3	4	3.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	5	5.5
Compatibility	5	6	5.5	6	4	5.0
Archetypal Elements	6	6	6.0	5	4	4.5
Character of Peace & Silence	6	5	5.5	3	2	2.5
Average	*4.6*	*5.0*	*4.8*	*4.3*	*3.3*	*3.8*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	2	3	2.5
Hearing (auditory)	1	1	1.0
Smell (olfactory)	3	5	4.0
Touch (tactile)	3	4	3.5
Average	*2.3*	*3.3*	*2.8*

As shown in Table 30, the on-site CLM evaluation resulted in an average score of 3.79, which decreased to 2.75 in the sensory evaluation, indicating low contemplative quality according to the CLM interpretation guidelines. While the CLM scores suggest some contemplative potential based on spatial and vegetative characteristics, the sensory evaluation reveals significant disturbances that reduce the experience of calm and mental restoration.

Auditory impressions were the most influential factor affecting the on-site experience. Continuous noise from traffic and aircraft, together with human activity related to a temporary art workshop, dominated the soundscape. Although softer sounds such as birds and footsteps on gravel were also

present, they were largely overshadowed by louder, artificial noise sources. The auditory environment therefore strongly limited the possibility for a contemplative and peaceful experience.

Visual impressions were also affected by the movement and activity at the view. The presence of people, proximity to one of the entrances, and signs of urban life close by reduced the sense of enclosure and separation suggested by the image-based evaluation. This contributed to a feeling of disturbance and made it difficult to settle or remain in the space.

In contrast, olfactory and tactile experiences were generally positive at the view. Scents of greenery and fresh air following rainfall, together with pleasant materials and varied textures, supported bodily comfort and sensory richness. The gravel paths and vegetation contributed positively to the physical experience, even though these qualities could not balance out the dominant auditory and visual disturbances.

The clear difference between the CLM and sensory scores demonstrates how strongly sensory conditions influence perceived contemplative quality. Temporary activities and environmental noise significantly altered the on-site experience, shifting the view from moderate contemplative potential to low contemplative quality. This highlights how strongly situational and temporal factors can affect on-site evaluations.

During a later visit, when the temporary activity had ended, the view was quieter and more inviting despite persistent traffic and aircraft noise. Under these conditions, dense vegetation and small semi-enclosed spaces supported short moments of peaceful contemplation. This variation shows that contemplative quality depends heavily on timing and ongoing activities.

3.2.4 View 4 - The Circular Water Mirrors

Image view **On-site view**

Figure 29. The Circular Water Mirrors: image-based and on-site views
Left: photographic representation used for Phase 1 image-based evaluation. Right: corresponding on-site photograph documented by the authors during fieldwork. Source: Left: Ricardo Oliveira Alves / Calouste Gulbenkian Foundation (n.d.).

Description of the View

View 4 is located in the original part of the Gulbenkian Garden, north-west of the Modern museum (Figure 24; Figure 29). The design emphasises subtle geometry and layered plantings, with water features serving both functional and sensory purposes. The view is surrounded by dense vegetation, and the tree canopies filter much of the light, giving the place a dark, muted atmosphere with an almost jungle-like character. Overall, the view feels a bit forgotten, as if it was hidden away from the rest of the park. The view also differs quite a lot from the other views visited both in Gulbenkian Garden and Generalife Garden. The place feels slightly mysterious and the color palette consists of earthy autumn tones which contribute to a muted and calming experience. The view contains shallow round ponds which draw immediate attention, reflecting the treetops and fragments of sky, capturing light, colour and movement. The ponds also reflect the original garden's emphasis on the integration of natural processes, where movement, light and seasonal change shape how the space is experienced (Calouste Gulbenkian

Foundation, n.d.b). The view's soundscape is affected by occasional aircrafts flying overhead and a heavily trafficked road, located directly outside the space, separated only by a few shrubs.

The combination of spatial layering, reflected light and the subtle presence of water offers a nice contribution to the rest of the garden and serves as a meaningful view for applying and evaluating the Contemplative Landscape Model.

CLM- and Sensory Scores

Scores from the CLM evaluation at view 4 can be found in Table 31. This includes images and the on-site evaluations, as well as sensory evaluation. The group average scores represent the combined scores of Evaluator 1 and 2.

Table 31. CLM and sensory scores at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	2	2.0	3	3	3.0
Landform	3	2	2.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	6	6.0
Character of Peace & Silence	4	4	4.0	3	3	3.0
Average	*4.4*	*4.3*	*4.4*	*4.6*	*4.4*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	5	4.5
Hearing (auditory)	1	2	1.5
Smell (olfactory)	5	6	5.5
Touch (tactile)	6	4	5.0
Average	*4.0*	*4.3*	*4.1*

Differences Between Using Image-Based and On-Site Evaluations

Table 32 shows differences in scores between image and on-site evaluations. The group average represents the combined scores of Evaluator 1 and 2.

Table 32. Differences in scores between image-based and on-site evaluations at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	2	2.0	3	3	3.0
Landform	3	2	2.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	6	6.0
Character of Peace & Silence	4	4	4.0	3	3	3.0
Average	*4.4*	*4.3*	*4.4*	*4.6*	*4.4*	*4.5*

As shown in Table 32 both evaluators have changed their score on 'Layers of the Landscape' and 'Character of Peace & Silence'. Evaluator 1 has also changed the score on 'Biodiversity', whereas Evaluator 2 has also changed the score on 'Archetypal Elements'. 'Landform', 'Color & Light' and ''Compatibility'' have remained the same for both evaluators. The group

average scores remained the same for both evaluators on 'Landform', 'Color & Light' and 'Compatibility', but have changed on 'Layers of the Landscape', 'Biodiversity', 'Archetypal Elements' and 'Character of Peace & Silence'. For both Evaluator 1 and 2 the average scores are lower on image compared to on-site.

The biggest difference between the image and the on-site experience was the impact of the large road located nearby. In the photograph, the road was not visible and therefore did not influence the experience of the view. On-site, however, the constant traffic noise made a significant difference and greatly reduced the view's contemplative quality. Although the place appeared visually calm and still, especially in the image, the fast movement and activity close to the space disturbed this sense of quietness. In addition, airplanes flying low toward a nearby airport further affected the atmosphere and disrupted the sensory experience. Another smaller difference was related to physical comfort. Evaluator 2 noted that the benches were made of metal, making them cold and uncomfortable to sit on for longer periods, something that could not have been anticipated from the photograph.

Differences also emerged in the category 'Layers of the Landscape'. On-site, both evaluators experienced the landscape layers as slightly more distinct than in the image. As noted at previously visited views, this raises the question of whether the three-dimensional experience of being physically present, compared to viewing a flat photograph, makes layers easier to perceive on-site.

Finally, the presence of people also differed between the two settings. No visitors were visible in the image, while on-site a few individuals passed through the space or passed by in the background. In general, people were not highly disturbing, but there were occasional disruptions. For example, a couple walking a dog entered the area, and the dog started to chase birds bathing in one of the circular ponds, which briefly broke the stillness of the view.

Table 33 shows where there are differences in scores between the evaluators. The group average represents the combined scores of Evaluator 1 and 2.

Table 33. Differences in scores between evaluators at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	2	2.0	3	3	3.0
Landform	3	2	2.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	6	6.0
Character of Peace & Silence	4	4	4.0	3	3	3.0
Average	*4.4*	*4.3*	*4.4*	*4.6*	*4.4*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	5	4.5
Hearing (auditory)	1	2	1.5
Smell (olfactory)	5	6	5.5
Touch (tactile)	6	4	5.0
Average	*4.0*	*4.3*	*4.1*

As shown in Table 33, the evaluators have put different scores on images for the characters 'Landform', 'Biodiversity' and 'Archetypal Elements'. On site the evaluators have answered the same on every category except 'Landform'. On the sensory evaluation the evaluators have answered differently on all of the senses. At this view there were generally very small differences between the evaluators' different scores and written experiences. The only difference worth mentioning concerns whether the space felt intimate and secure.

Evaluator 1 answered yes, there is a sense of safety and calm at the view. Evaluator 2, on the other hand, answered not really. That the close-by road disturbed the intimate feeling and that the dense plantings slightly disturbed the feeling of safety.

On-Site CLM Evaluations in Relation to Sensory and Bodily Perceptions

Table 34 shows the differences in scores between the CLM evaluation and the sensory evaluation at View 4.

Table 34. Differences in scores between the CLM evaluation and sensory evaluation at View 4

CLM	IMAGE			ON-SITE		
	Evaluator 1	Evaluator 2	Average	Evaluator 1	Evaluator 2	Average
Layers of the Landscape	2	2	2.0	3	3	3.0
Landform	3	2	2.5	3	2	2.5
Biodiversity	4	5	4.5	5	5	5.0
Color & Light	6	6	6.0	6	6	6.0
Compatibility	6	6	6.0	6	6	6.0
Archetypal Elements	6	5	5.5	6	6	6.0
Character of Peace & Silence	4	4	4.0	3	3	3.0
Average	*4.4*	*4.3*	*4.4*	*4.6*	*4.4*	*4.5*

SENSORY EVALUATION	ON-SITE		
	Evaluator 1	Evaluator 2	Average
Sight (visual)	4	5	4.5
Hearing (auditory)	1	2	1.5
Smell (olfactory)	5	6	5.5
Touch (tactile)	6	4	5.0
Average	*4.0*	*4.3*	*4.1*

As shown in Table 34, Evaluator 1 had an average score of 4,57 on the CLM evaluation and a lower score of 4,00 on the sensory evaluation. Evaluator 2 had a score of 4,43 on the CLM evaluation and a lower score of 4,25 on the sensory evaluation. The group average score dropped from 4,50 on the CLM evaluation to 4,13 on the sensory average.

As already mentioned, the most disturbing sensory factors at this view was the noise from the large road just outside the space, together with airplanes passing overhead. There was a strong impulse to move further into the inner parts of the park in order to get away from the road.The evaluators were more affected by traffic noise here than at Gulbenkian 1, highlighting how crucial the distance to surrounding infrastructure is.

The Tactile experiences at the view were both positive and negative. The ground materials and natural textures, such as gravel and tree bark, contributed positively, while the cold metal benches reduced comfort and had a negative impact. The view was also perceived as slightly chilly, largely due to the dense shade from the trees, which negatively influenced the experience during the visit. However, it is worth mentioning that this effect is strongly seasonal. On warmer summer days, the same coolness and shelter from the sun could instead be experienced as highly restorative and contribute positively to the overall atmosphere.

Although few people entered the space, their presence occasionally felt distracting, making it harder to maintain focus and feel stillness. The most positive sensory impression on-site was visual. The circular ponds, with their quiet reflections and still surfaces, were described by Evaluator 1 as “crème de la crème” for the eyes. The view also felt pleasantly dark and muted in tone, creating a cozy, almost mysterious atmosphere. Birdsong also contributed positively to the experience in contrast to the surrounding urban noise. The air also carried fresh, aromatic scents from plants such as eucalyptus, thyme, and rosemary.

Without the intrusive sounds of traffic and airplanes, the combination of water reflections, lush vegetation, and birdsong would likely have provided a

much more contemplative and relaxing experience. This underlines the importance of further inclusion of sensory dimensions in the CLM.

The view also raised interesting questions about privacy and spatial perception. Because the space felt intimate and enclosed, the presence of other visitors was experienced as more disruptive than at view 3. This suggests that contemplative experiences are influenced not only by physical design, but also by unspoken social dynamics, in particular how a space is perceived as private or public, and how this shapes one's tolerance of having other people nearby.

3.3 Summarisation Of Results From The Case Study

This section brings together the main results from the case study. The three summary diagrams present the main comparisons between image-based and on-site CLM evaluations (Figure 31), differences between the two evaluators (Figure 33), and differences between CLM and sensory evaluations (Figure 35). The supporting illustrations introduce each comparison visually (Figures 31; 33; 35). Looking at the results side by side makes it easier to identify recurring patterns, as well as differences between the views and the two gardens.

Figure 30 illustrates the comparison between image-based and on-site evaluation, while Figure 31 presents the corresponding CLM score results.

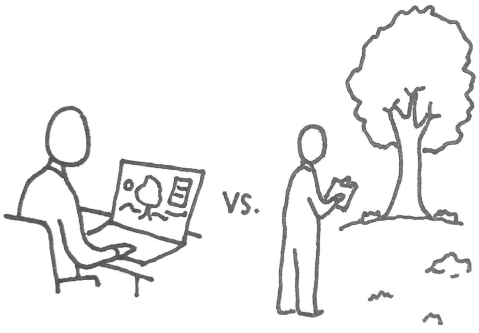

Figure 30. Image-based and on-site evaluation comparison
Schematic illustration of the comparison between photographic evaluation and direct on-site landscape experience.

As shown in Figure 31, comparisons between the image-based and on-site evaluations revealed both similarities and differences across the selected views. In several cases, the scores remained relatively consistent, while other views changed more noticeably during the on-site visits. Sound, movement, surrounding activity, and the presence of people, appeared to largely influence the experience on-site compared to the photo-based evaluation.

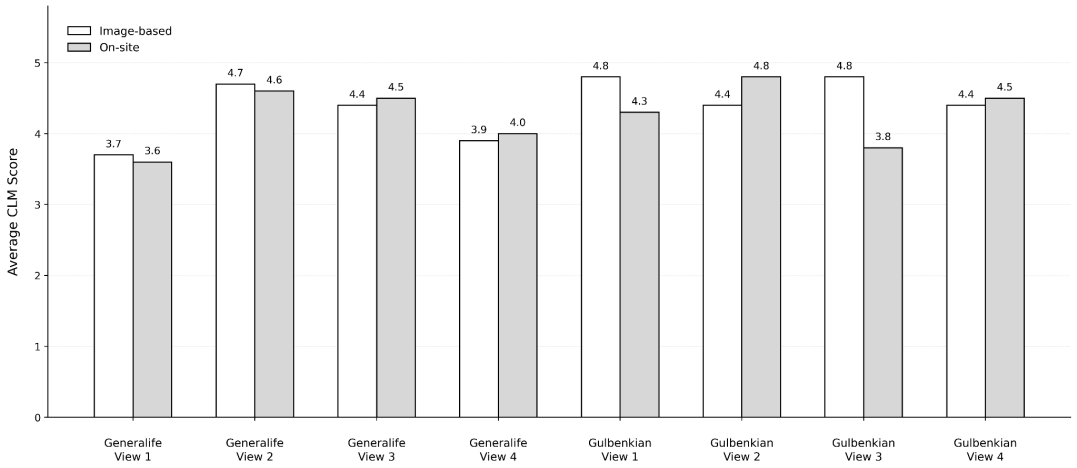

Figure 31. Comparison between image-based and on-site CLM evaluations across all selected views
The diagram presents group average CLM scores based on the combined evaluations of Evaluator 1 and Evaluator 2.

Figure 32 illustrates the comparison between evaluators, while Figure 33 presents the differences in CLM scores between Evaluator 1 and Evaluator 2.

Figure 32. Evaluator comparison structure
Schematic illustration of how the same landscape view was interpreted by different evaluators.

As shown in Figure 33, differences between Evaluator 1 and Evaluator 2 occurred in both image-based and on-site evaluations. Some views showed relatively similar evaluations, while others revealed clearer differences in how

contemplative qualities were interpreted. Variations were generally greater during on-site evaluations, where sensory conditions and personal interpretations appeared to influence the experience differently between evaluators.

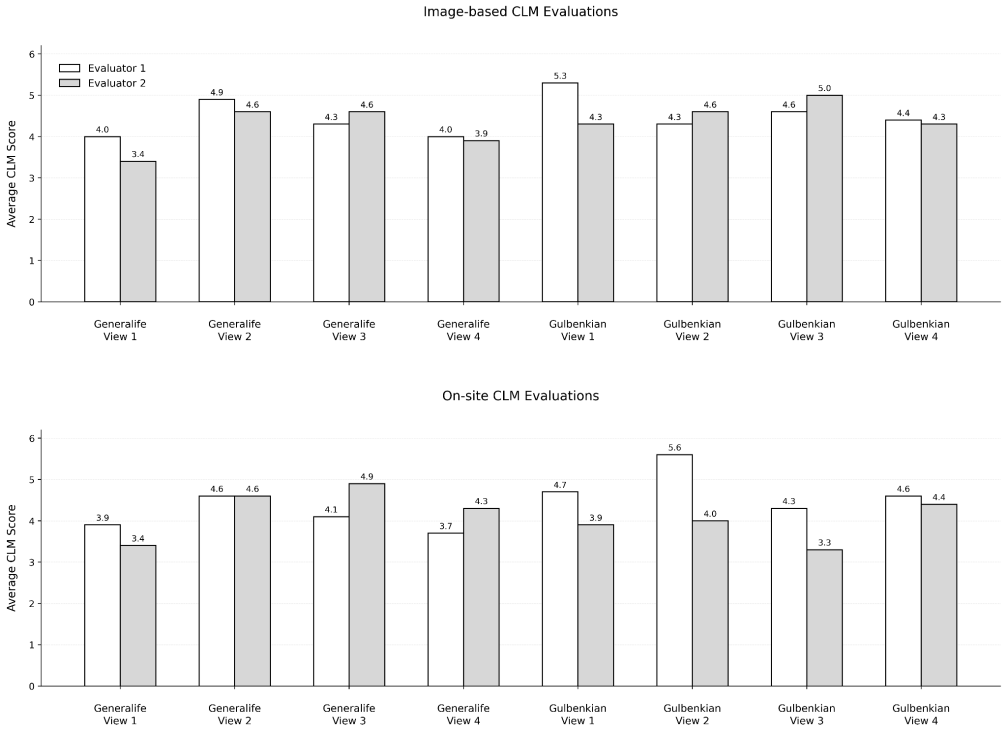

Figure 33. Differences between Evaluator 1 and Evaluator 2 in the image-based and on-site CLM evaluations across all selected views
The diagrams present the average CLM scores assigned by each evaluator for both evaluation methods.

Figure 34 illustrates the relationship between landscape evaluation and sensory experience, while Figure 35 presents the comparison between on-site CLM scores and sensory scores.

Figure 34. CLM and sensory evaluation comparison
Schematic illustration of how landscape evaluation was compared with sensory and embodied experience.

As shown in Figure 35, comparisons between CLM evaluations and sensory evaluations demonstrated that sensory scores were often lower than CLM scores. The largest differences appeared in views where noise, movement, crowding, or other sensory disturbances negatively affected the on-site experience. These differences were particularly visible in the Generalife Garden, where contextual conditions appeared to influence embodied experience more strongly. In the Gulbenkian Garden, the relationship between CLM and sensory scores was generally more consistent.

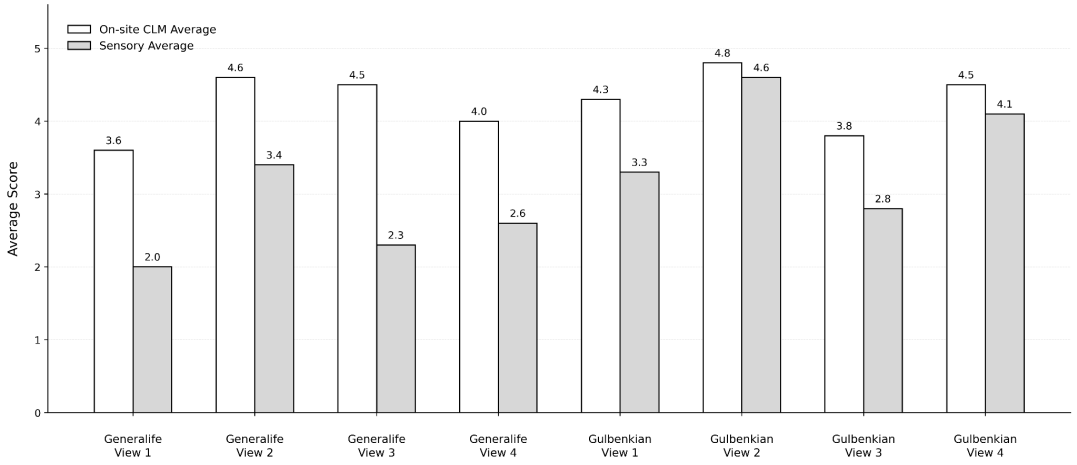

Figure 35. Comparison between CLM evaluations and sensory evaluations across all selected views

The diagram presents the group average scores based on the combined evaluations of Evaluator 1 and Evaluator 2.

4. Discussion

This chapter interprets the results in relation to the research questions and previous research on contemplative landscapes. The discussion is structured around four key aspects: how the Contemplative Landscape Model (CLM) is interpreted in practice, differences between evaluators, comparisons between image-based and on-site evaluations, and the role of sensory conditions in shaping landscape experience. Methodological considerations, practical implications, and directions for future research are also addressed in the chapter.

4.1 Interpretation of the Contemplative Landscape Model (CLM)

It is important to emphasise that the CLM is primarily designed to assess spatial characteristics associated with contemplative potential, rather than to measure how contemplative the experience is at a certain location (Olszewska-Guizzo, 2023). This distinction became central when interpreting the findings of the study.

While the model provides a structured framework for analysing contemplative landscape qualities, the results suggest that its application still involves subjective judgement and interpretative decisions. For example, during the first evaluation in the Generalife Garden, the presence of visitors was approached differently. One evaluator attempted to minimise the influence of people in order to focus on spatial structure, while the other included social activity as part of the landscape experience. Since visitor presence clearly influenced how the place was experienced, these different approaches affected the evaluation outcome. After discussing their interpretations, the evaluators aligned their understanding of how the model should be applied, highlighting the importance of shared interpretation.

Differences in interpretation also appeared in several of the landscape components, for example the evaluations of spatial depth and *Layers of the Landscape*, where partially obscured views were interpreted either as layered or visually closed. Variations also occurred in the identification of *Archetypal Elements*. These examples show that differences in CLM results may arise even when evaluators observe the same environment, indicating that interpretation plays a central role in the application of the model.

A key insight from the study concerns the relationship between the broader intentions of the CLM and how the model functioned in practice during the evaluations. Although several CLM components include qualities that extend beyond visual form, such as peace and silence and archetypal elements, these aspects were not always clearly reflected in the final scores. In practice, the evaluations often relied more heavily on visually observable spatial qualities within the specific view.

4.2 Subjectivity and Reliability of Evaluators

The results also show clear differences between evaluators in both the CLM and sensory evaluations. While some variations were relatively small, most locations were assessed differently. Agreement was generally higher in more visually explicit characters, such as *Compatibility* and *Color & Light*, while broader and more interpretative characters, including *Landform*, *Layers of the Landscape*, and *Biodiversity*, showed greater variation.

Differences were also more frequent in on-site evaluations, suggesting that complex and context-rich environments make agreement more difficult to achieve. This pattern was even more pronounced in the sensory evaluations, where most scores differed, particularly for sight, smell, and touch, while sound showed somewhat greater consistency.

A closer look at the results indicates that these differences were often linked to attention and interpretation rather than fundamentally different

observations. Some elements were perceived differently depending on what was noticed and how it was interpreted.

Overall, the findings suggest that subjectivity is an inherent part of applying the CLM. While this introduces variation in the results, it also reflects how landscapes are experienced in reality. This is consistent with research showing that perception emerges through the interaction between the individual and the environment (Seamon, 2018), and that responses may vary depending on both individual and contextual factors (Olszewska-Guizzo, 2023).

4.3 Comparison of Image-based and On-Site Evaluations

A central focus of the study was the comparison between image-based and on-site evaluations. The results showed that perceived contemplative qualities differed between the two approaches, but without any consistent overall pattern. This variation is consistent with previous research showing that image-based and on-site evaluations can produce similar, but not identical, results (Stamps, 1990; Hull & Stewart, 1992). The on-site observations revealed contextual and sensory conditions that were not fully visible in the images, such as spatial depth, vegetation, and ecological detail. These contributed to a more nuanced understanding of the landscape, although they were not always reflected in the CLM scores.

The results also show that on-site evaluations were influenced by situational factors such as weather, social activity, and momentary sensory conditions, highlighting how real environments are dynamic and context-dependent. In contrast, image-based evaluations allowed for more consistent comparisons under controlled conditions (Stamps, 1990), but did not capture the full complexity of real environments. This supports previous research showing

that simulated environments may not fully reproduce responses associated with multisensory experience (De Kort et al. 2006).

4.4 Overall Differences between CLM-Evaluations and Sensory & Bodily Perceptions

The comparison between CLM and sensory evaluations shows that the scores mostly do not align. In several cases, landscapes that scored highly in the CLM were rated lower in sensory evaluations due to disturbances or contextual conditions. These differences were often relatively large and were more pronounced in the Generalife Garden than in the Gulbenkian Garden, reflecting differences in on-site conditions such as noise, movement, and visitor presence.

These findings indicate that the scores of the CLM do not fully reflect how contemplative a place is experienced in practice. This aligns however with the intention of the model as a tool for assessing spatial characteristics associated with contemplative potential, rather than to measure the experience at a certain location. (Olszewska-Guizzo, 2023). At many of the studied views sensory conditions, particularly sound and movement, played a central role in shaping the experience. This is consistent with phenomenological perspectives, which emphasise that spatial experience emerges through embodied and multisensory engagement with the environment (Pallasmaa, 2012; Seamon, 2018). This also aligns with research that highlights the importance of acoustic conditions for perceived calm and restoration (Cerwén & Mossberg, 2019).

Human presence also emerged as an important but complex factor. In some cases, visitors largely disturbed the experience of the sites and reduced the sense of calm, while in others they contributed positively to the atmosphere. This suggests that human presence is not inherently negative, but depends on behaviour, activity, and context.

4.5 Methodological Reflections

The methodological approach adopted in this study combines image-based and on-site evaluations, using CLM, together with sensory assessments in order to provide a broad understanding of contemplative landscape perception. This multi-phase approach can be seen as a strength, as it enables comparison between different modes of landscape experience. However, it also introduces several methodological considerations.

The evaluators' limited experience with the CLM may have affected interpretation. As the CLM framework involves interpretative judgement, the results may also be influenced by the evaluators' individual perceptions, experiences and sensory sensitivity. The use of two evaluators made it possible to compare interpretations; however, differences in scoring and descriptive observations indicate that subjective judgement plays a role in how contemplative qualities are identified and assessed. This can be understood as both a limitation and a strength, as subjective interpretation may affect consistency while also reflecting how landscapes are experienced in real-world contexts.

Another limitation relates to the difficulty of controlling the conditions under which the on-site evaluations were conducted. Factors such as time of day, weather and visitor presence could not be standardised, which may have shaped how the landscapes were perceived and assessed. This corresponds with previous research showing that evaluations in real environments are shaped by contextual conditions (Hull & Stewart, 1992).

According to the CLM guidelines, crowded conditions should also be avoided in order to prevent obstruction of key landscape elements (Olszewska-Guizzo, 2023). However, it was not possible within the scope of this study to control or limit visitor presence during the site visits. As a result, several evaluations were conducted under conditions where a high level of movement and human activity was present, which affected both perception and scoring. This can be considered a methodological limitation, as the

landscapes were not always assessed under the controlled conditions recommended by the model, but rather under real-world circumstances, which reflect how urban landscapes are typically experienced in practice.

In addition, a limitation related to the nature of the CLM itself. While the model is grounded in neuroscientific research, this study relies on qualitative and experiential evaluation. The results therefore reflect perceived contemplative qualities rather than directly measured physiological responses. The study did not include additional data collection methods such as interviews, surveys or physiological measurements (e.g. EEG), which are sometimes used in CLM-related research.

The evaluators in this study share a background as landscape architecture students, which implies a certain level of design awareness and sensitivity to spatial and sensory qualities. This shared background provided a common analytical framework, but may also have influenced how certain qualities were prioritised or interpreted. At the same time, neither evaluator had visited the sites beforehand, and both had limited prior knowledge of the selected locations, which reduced the influence of pre-existing familiarity and allowed the evaluations to be based primarily on immediate perception.

Finally, the sensory observations were limited to four dimensions: sight, hearing, smell and touch. While this provided a clear and manageable analytical structure, it also meant that other aspects of embodied experience, such as proprioception or taste, were not included.

4.6 Implications for Landscape Architecture

Despite the methodological considerations, the findings offer several insights relevant to landscape architectural practice.

First, the results from the case study highlight the importance of designing for sensory balance in urban green spaces. Visual composition alone is not

sufficient to support contemplative experiences if auditory or environmental disturbances dominate the atmosphere. Design strategies such as acoustic buffering, spatial enclosure, and separation from major circulation routes may therefore be crucial in creating environments that support contemplative experiences. This finding can also be connected to research highlighting the importance of sensory conditions in shaping environmental experience (Grahn & Stigsdotter, 2010; Cerwén & Mossberg, 2019).

Second, the findings suggest that contemplative qualities can exist even in dense urban environments when landscapes provide sufficient spatial separation, vegetation structure, and sensory buffering from surrounding urban activity. Several of the studied views demonstrated that carefully designed green spaces can function as restorative environments within the city.

Third, the CLM framework appears to be more suitable as a tool for evaluating and guiding the design of contemplative landscapes than for mapping real-life contemplative experiences. This aligns with the intention of the CLM to assess spatial landscape characteristics associated with contemplative potential, rather than to measure how contemplation is experienced in a real-life situation (Olszewska-Guizzo, 2018; Olszewska-Guizzo, 2023).

4.7 Future Research

This study highlights several aspects of contemplative landscape evaluation that remain underexplored within existing CLM research. While the Contemplative Landscape Model provides a structured framework for analysing spatial characteristics associated with contemplative potential, further research is needed to better understand how the model is interpreted and applied in practice.

One key area concerns the application of the CLM. The results show that differences in evaluation are influenced not only by what is observed in the landscape, but also by how evaluators understand the purpose and scope of the model. This indicates a need for clearer guidelines, calibration, or training to support more consistent application.

The findings also highlight the role of subjectivity and inter-rater reliability. As variation between evaluators appears to be an inherent part of applying the model, future research could involve larger and more diverse groups of participants. Including individuals with different cultural backgrounds and levels of design expertise could provide deeper insight into how individual interpretation influences CLM evaluations.

The study also points to the importance of sensory and situational aspects that are mainly not captured within the CLM framework. While the model focuses more on visual and spatial characteristics, the findings from the case study indicate that factors such as sound, movement, and social activity largely influence how landscapes are experienced. This can be related to research emphasising the role of multisensory experience in environmental perception (Pallasmaa, 2012; Cerwén & Mossberg, 2019). Future research could therefore explore how these aspects might be more explicitly considered in the design of contemplative landscapes.

Finally, the CLM framework itself suggests that its components do not contribute equally to contemplative potential. Elements such as 'Layers of the Landscape', 'Character of Peace & Silence', and 'Archetypal Elements' are described as particularly influential (Olszewska-Guizzo, 2023). Future research could therefore investigate how the model might be further developed, for example through a weighting system that allows certain components to have a greater influence on the overall evaluation and a larger influence on the CLM-scores.

5. Conclusion

This chapter summarises the main contributions of the study and reflects on their implications for landscape architecture. The purpose of this thesis was to examine how contemplative qualities in urban landscapes can be identified, interpreted, and evaluated using the Contemplative Landscape Model (CLM), with a focus on differences between image-based and on-site evaluations, the role of multisensory conditions, and variation in interpretation between evaluators.

The findings suggest that the CLM can function as a structured framework for identifying spatial and visual characteristics associated with contemplative potential. At the same time the CLM should not be understood as a purely objective measurement tool. The outcome of the evaluations depended on how the model was interpreted and applied, and in the case of on-site evaluations, on the conditions under which the different views were experienced.

There were also no consistent differences found between image-based and on-site evaluations. However, the on-site evaluations revealed a clear gap between contemplative potential and actual experience. Sensory and situational conditions influenced how landscapes were perceived, meaning that environments with high CLM scores were not always experienced as contemplative. This shows that spatial qualities alone are not enough to ensure contemplative experience in practice.

The results also highlighted the role of the evaluator. Differences in scoring were mainly related to interpretation and attention, rather than to fundamentally different observations. This indicates that subjectivity is an inherent part of applying the CLM and supports its understanding as an interpretative analytical framework.

Overall, the study suggests that the main strength of the CLM is that it helps make spatial qualities associated with contemplative potential visible and

comparable. At the same time, the study also shows that this potential does not always translate into contemplative experience. Instead, how a landscape is perceived largely depends on sensory conditions, situational context, and individual interpretation. Contemplative design qualities identified using the CLM should therefore be understood as possibilities rather than guaranteed outcomes.

For landscape architects, this means that designing contemplative environments is not only about adding the right spatial qualities. These qualities also need to be protected from noise, movement, crowding, and other sensory and contextual disturbances that can affect how the place is experienced.

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Popular Science Summary

In today's cities, it can be surprisingly difficult to find a place to simply pause. We move through environments filled with noise, movement, and constant impressions, rarely given the chance to slow down, reflect, or just be still. Many of us instinctively search for those moments: a quiet bench, the sound of water, a shaded path where the world feels a little calmer.

This thesis begins with that search. It asks a central question: what makes a place feel contemplative, and how can such qualities be identified and evaluated in landscape architecture?

To explore this, the study examines the Contemplative Landscape Model (CLM), a framework developed to describe landscape qualities that may support calmness, reflection, and inward attention. The model is not only applied, but also critically examined. How does it work in practice? What does it capture and what does it miss?

Two contrasting gardens were selected as case studies, the historic Generalife Garden in Granada and the modern Calouste Gulbenkian Garden in Lisbon. Eight views were analysed through both photographs and on-site visits. By comparing these two forms of exposure, the study investigates how contemplative qualities are interpreted under different conditions. It also considers how sensory factors, such as sound, atmosphere, movement and differences between evaluators influence the results.

At first glance, some places appeared calm and balanced in images. But standing there in real-life was a different story. The sound of traffic, people passing by, or subtle disturbances were factors that disrupted the experience at several sites. Other places, less striking in photographs, revealed a deeper sense of calm when experienced on-site, through filtered light, spatial depth, or a feeling of enclosure.

The findings suggest that the CLM can function as a structured framework for identifying spatial and visual characteristics associated with

contemplative potential. At the same time, it does not fully capture how a place is actually experienced in real-life situations. Sensory conditions and contextual factors play a significant role, and individual interpretations also influence how landscapes are evaluated.

In this way, the study highlights a key distinction between the *potential* for contemplation, as described by the model, and the *lived experience* of a place.

Ultimately, the thesis shows that contemplative landscapes cannot be understood through visual form alone. They emerge through the interaction between spatial design, sensory conditions, and human perception. The CLM can help identify the conditions that support such experiences but it cannot determine them.

Designing for contemplation is therefore not only about creating a visually contemplative environment, it is also about creating a design that carefully reduces the sensory disturbances that so often define contemporary urban life.

Appendix 1

Contemplative Landscape Model (CLM) Evaluation Checklist - **Photo analysis**

Evaluator: _____ Date/Time: _____

Location / Scene: _____

STEP 1 – LAYERS OF THE LANDSCAPE

I. Look at the landscape

II. Consider these questions

- ☐ 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 faraway 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 2 – LANDFORM

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 3 – BIODIVERSITY

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 4 – COLOR & LIGHT

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 5 – COMPATIBILITY

I. Look at the landscape

II. Consider these questions

- ☐ 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 manmade 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 6 – ARCHETYPAL ELEMENTS

I. Look at the landscape

II. Consider these questions

- ☐ Are any of the archetypal elements described in Chapter 10 present in the scene?
  - ☐ Forest, path, clearing
  - ☐ Desert
  - ☐ Water
  - ☐ Single old tree
  - ☐ Stone/rock
  - ☐ Mountain/hill
  - ☐ Circle
- ☐ 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 7 – CHARACTER OF PEACE & SILENCE

I. Look at the landscape

II. 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

Appendix 2

Contemplative Landscape Model (CLM) Evaluation Checklist - **On Site analysis**

Evaluator: _____ Date/Time: _____ Location / Scene: _____

STEP 1 – LAYERS OF THE LANDSCAPE

I. Look at the landscape

II. Consider these questions

- ☐ 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 faraway 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 2 – LANDFORM

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 3 – BIODIVERSITY

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 4 – COLOR & LIGHT

I. Look at the landscape

II. Consider these questions

- ☐ 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?

III. Give your score

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.

Score: _____

Comments/ Suggested interventions:

STEP 5 – COMPATIBILITY

I. Look at the landscape

II. Consider these questions

- ☐ 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 manmade 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 6 – ARCHETYPAL ELEMENTS

I. Look at the landscape

II. Consider these questions

- ☐ Are any of the archetypal elements described in Chapter 10 present in the scene?
  - ☐ Forest, path, clearing
  - ☐ Desert
  - ☐ Water
  - ☐ Single old tree
  - ☐ Stone/rock
  - ☐ Mountain/hill
  - ☐ Circle
- ☐ 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

STEP 7 – CHARACTER OF PEACE & SILENCE

I. Look at the landscape

II. 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?

III. 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.

Score: _____

Comments/ Suggested interventions:

Appendix 3

Sensory Evaluation (Embodied Observation)

Evaluator: _____ Date/Time: _____ Location / Scene: _____

Evaluation method: ☐ On-site

Sense	**Focus**	**Score (1–6)**	**Short Description / Reflection**
Sight (visual)	e.g. visual atmosphere, movement and rhythm		
Hearing (auditory)	e.g. sound sources, intensity, distance, temporal patterns		
Smell (olfactory)	e.g. source and origin, natural or artificial scents, freshness or heaviness, intensity and persistence		
Touch (tactile)	e.g. texture and surface quality, temperature, air movement		

Each sense will be scored from 1–6 (1 = disturbing/unpleasant, 6 = strongly supportive of contemplation). Short descriptive notes will be added to capture the embodied experience.

Appendix 4

Reflection Questions

How do sensory impressions influence your perception of contemplative quality?

How does the on-site experience differ from the image-based evaluation?

Which sensory elements most enhance (or disturb) contemplation?

Additional comments

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