

From 'Hortus Conclusus' to Tranquility
Space in High-density City



FROM 'HORTUS CONCLUSUS' TO TRANQUILITY SPACE IN HIGH-DENSITY CITY

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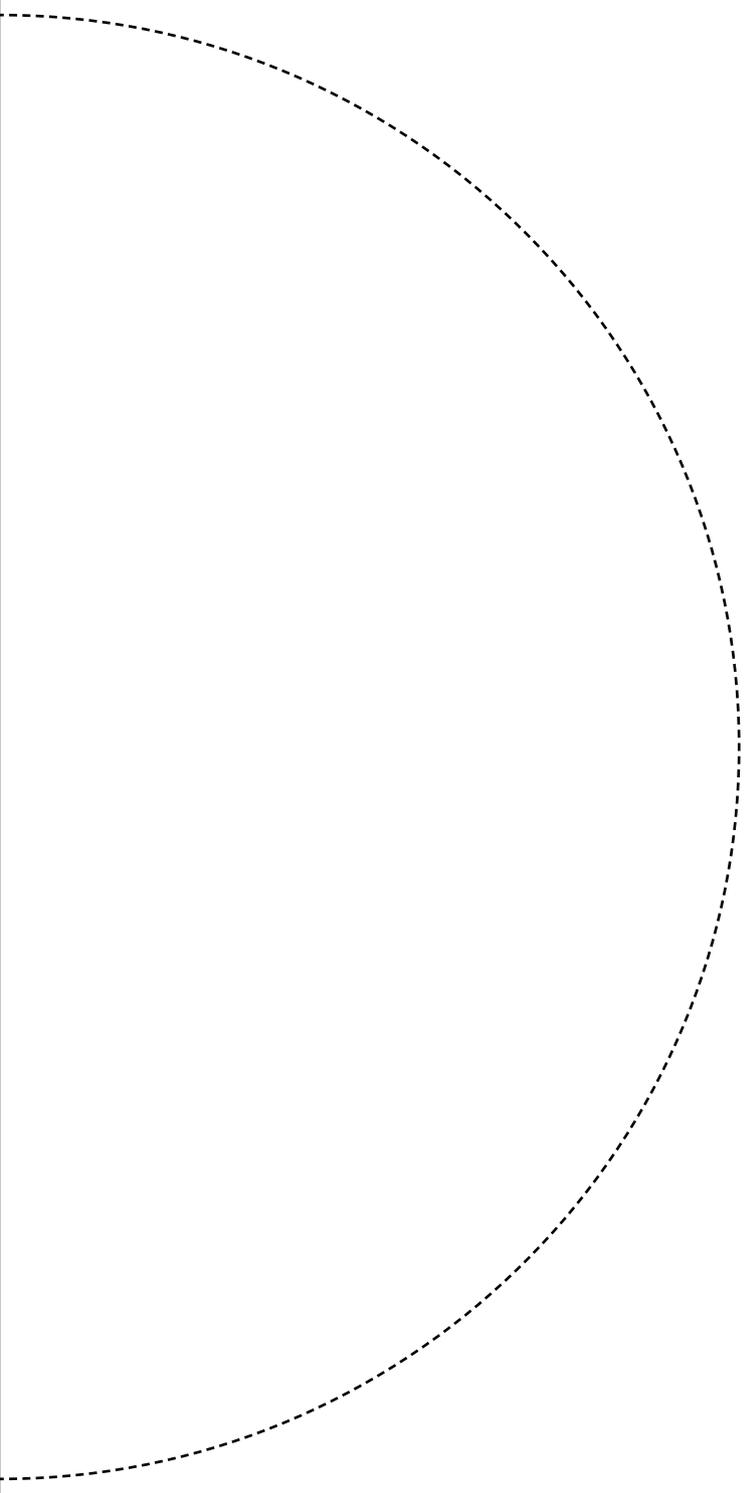
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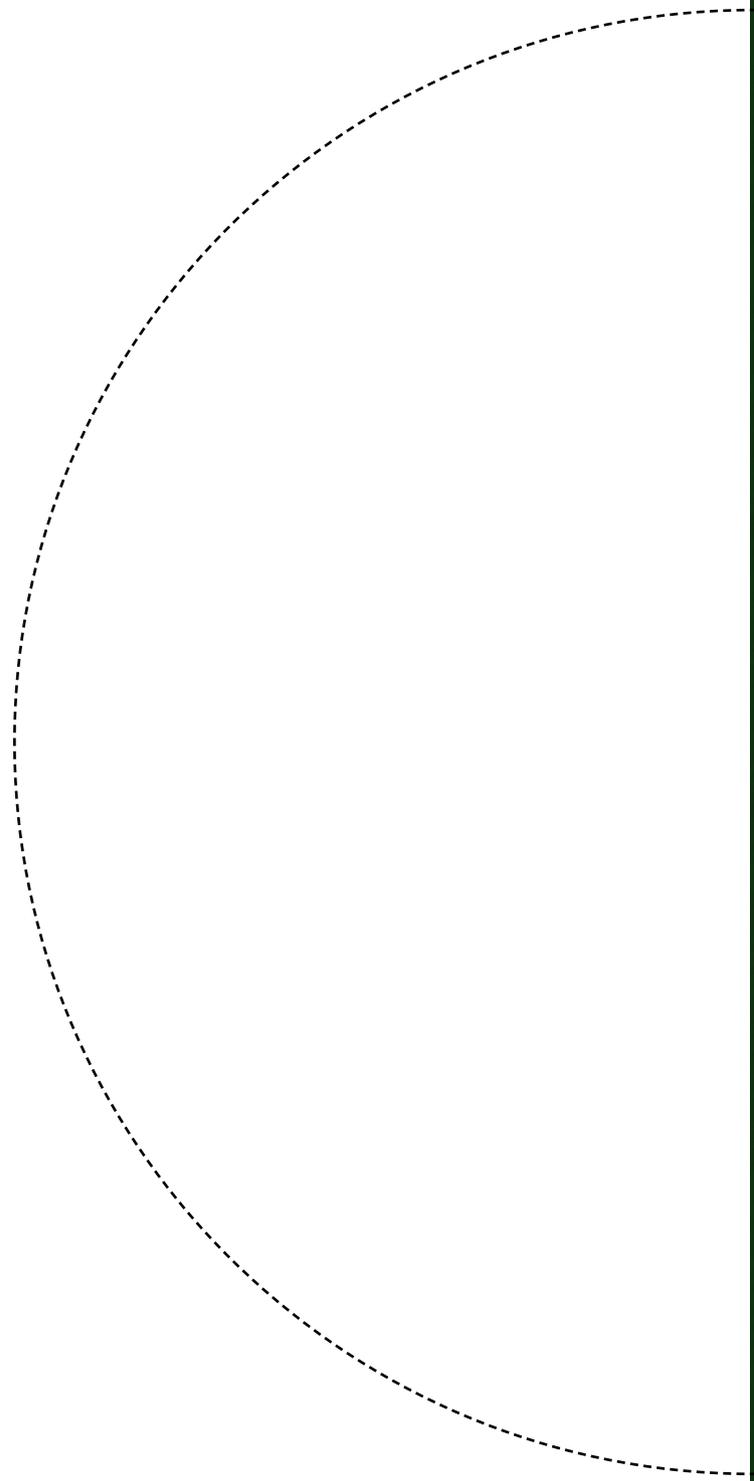
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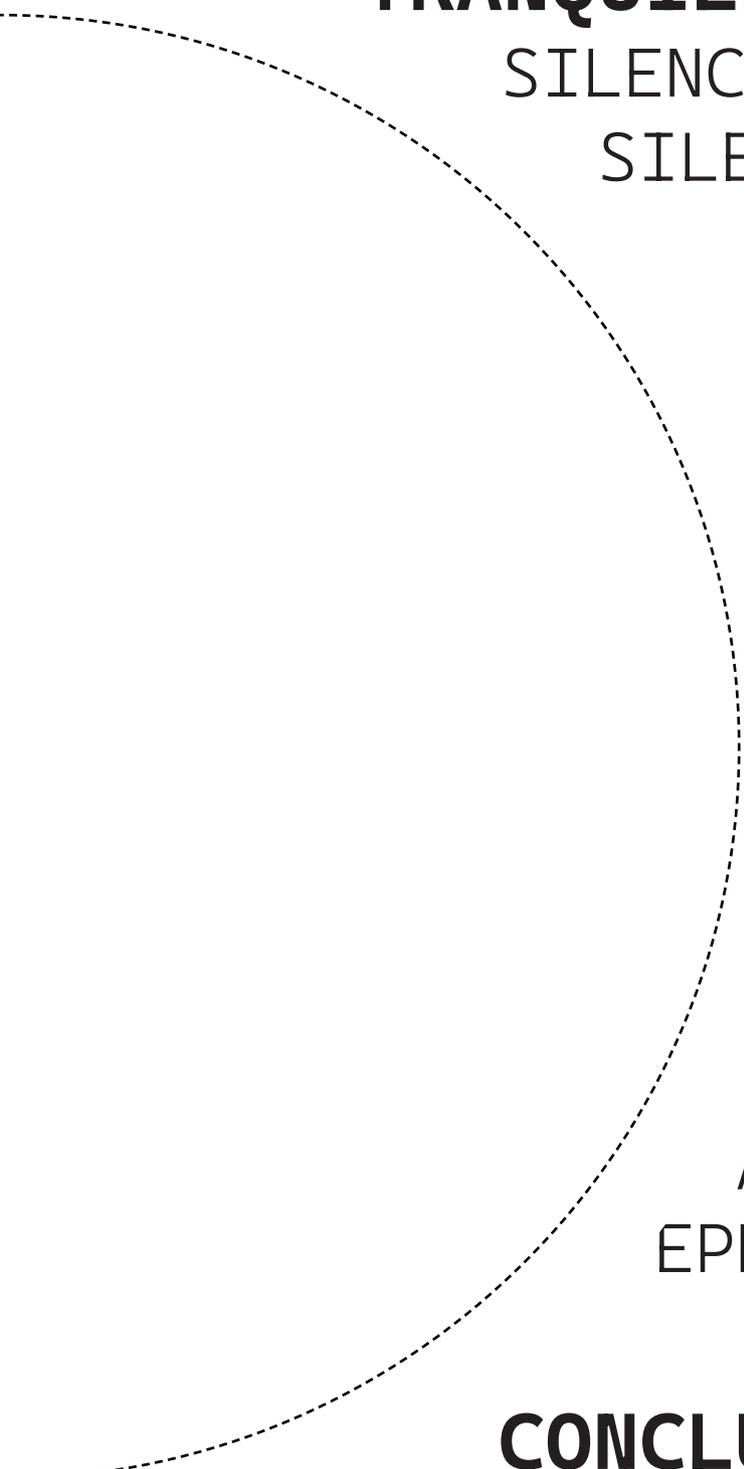


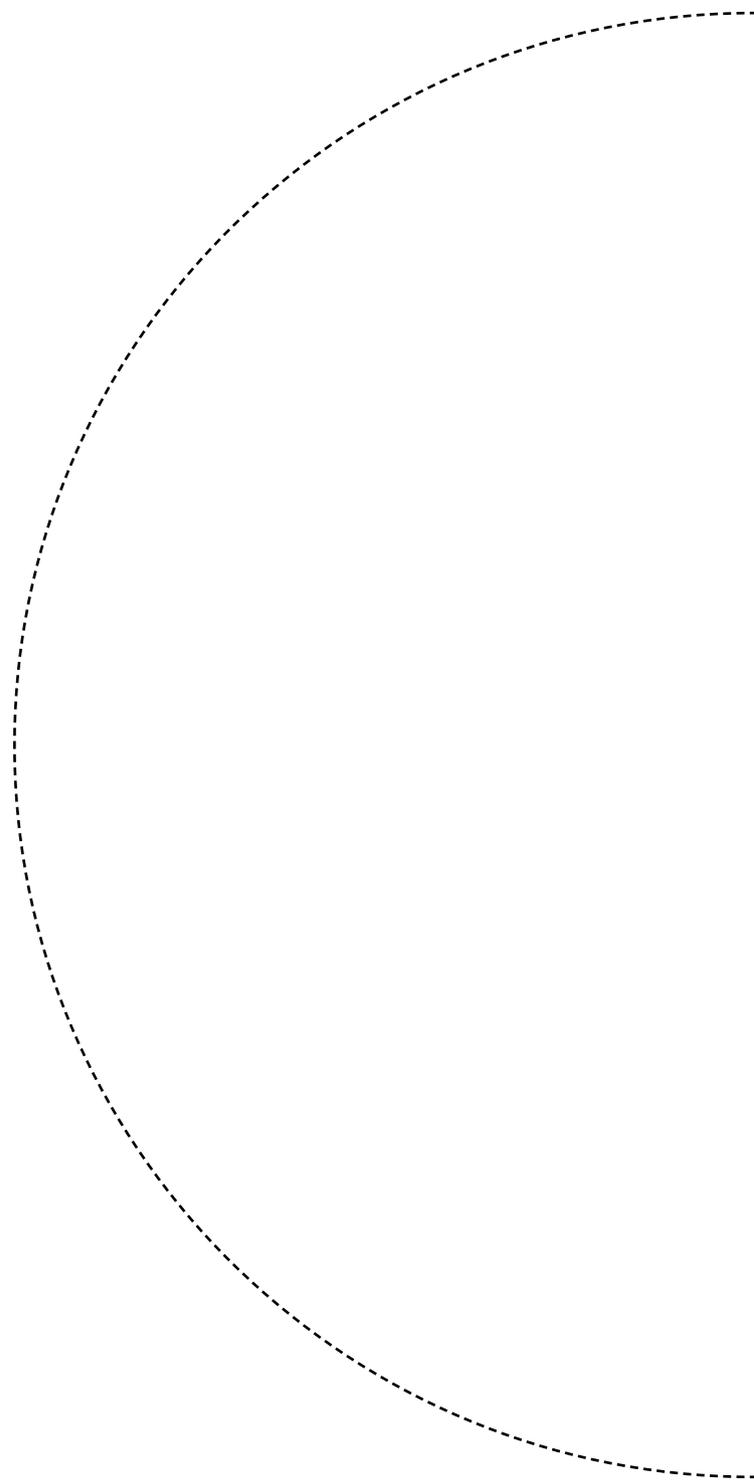
“One day, and probably soon, we need some recognition of what above all is lacking in our big cities: quiet and wide, expansive places for reflection. Places with long, glazed cloisters for rainy and sunny weather where no street-vendor’s cry or horse-drawn traffic noise can reach, and where good manners would prohibit even priests from praying aloud – buildings and sites that would altogether give expression to the sublimity of thoughtfulness and of stepping aside. The time is past when the church possessed a monopoly on reflection, when the *vita contemplativa* always had to be first of all a *vita religiosa*; and everything built by the church gives expression to that idea, | do not see how we could remain content with such buildings even if they were stripped of their churchly purposes. The language spoken by ● these buildings is far too rhetorical and unfree, reminding us that they are houses of God and ostentatious monuments of some-supra-worldly intercourse; we who are godless could not think our thoughts in such surroundings. We wish to see ourselves translated into stone and plants, we want to take walks in ourselves when we stroll around these buildings and gardens.”

Friedrich Nietzsche – The Gay Science



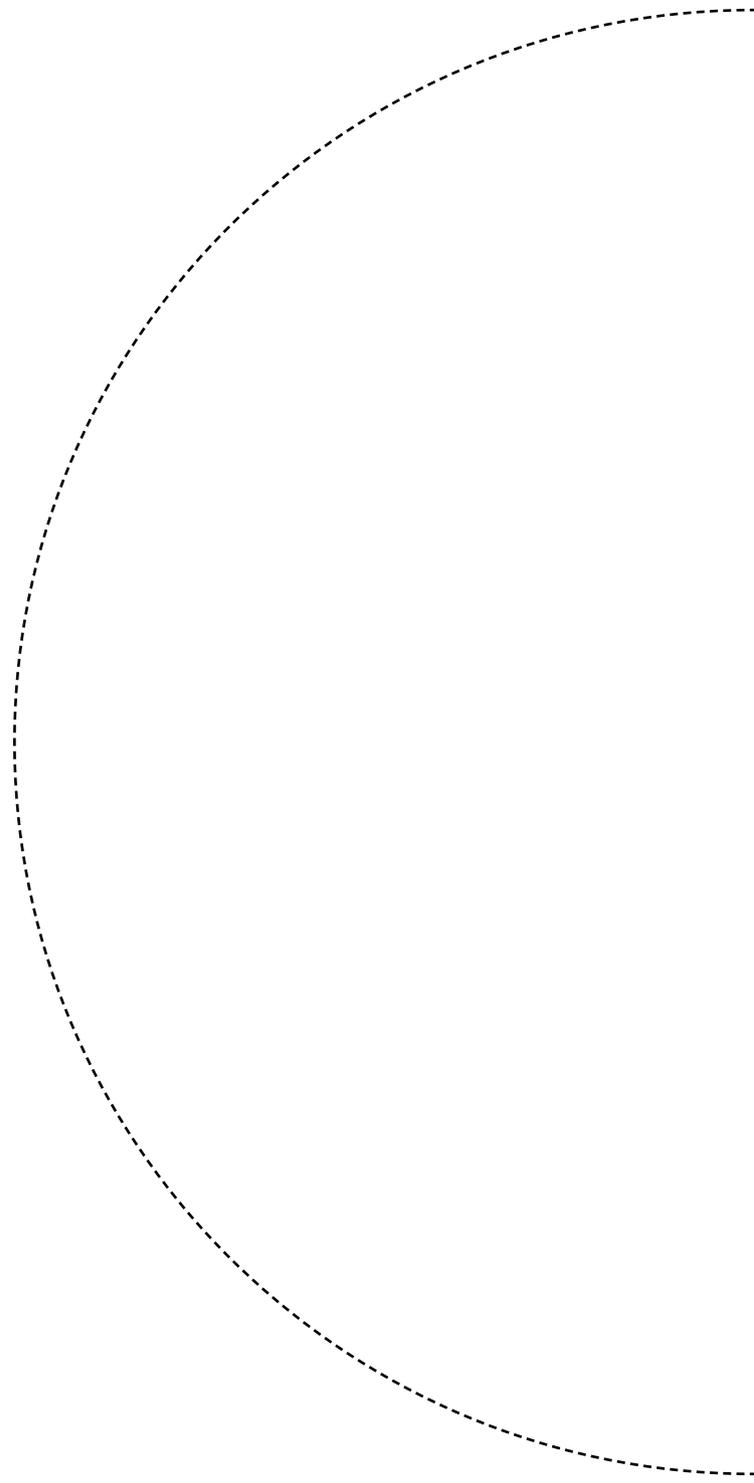
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Le jardin de Déduit (E. de Conty,
Livre des échecs amoureux),
Robinet Testard¹



INTRODUCTION

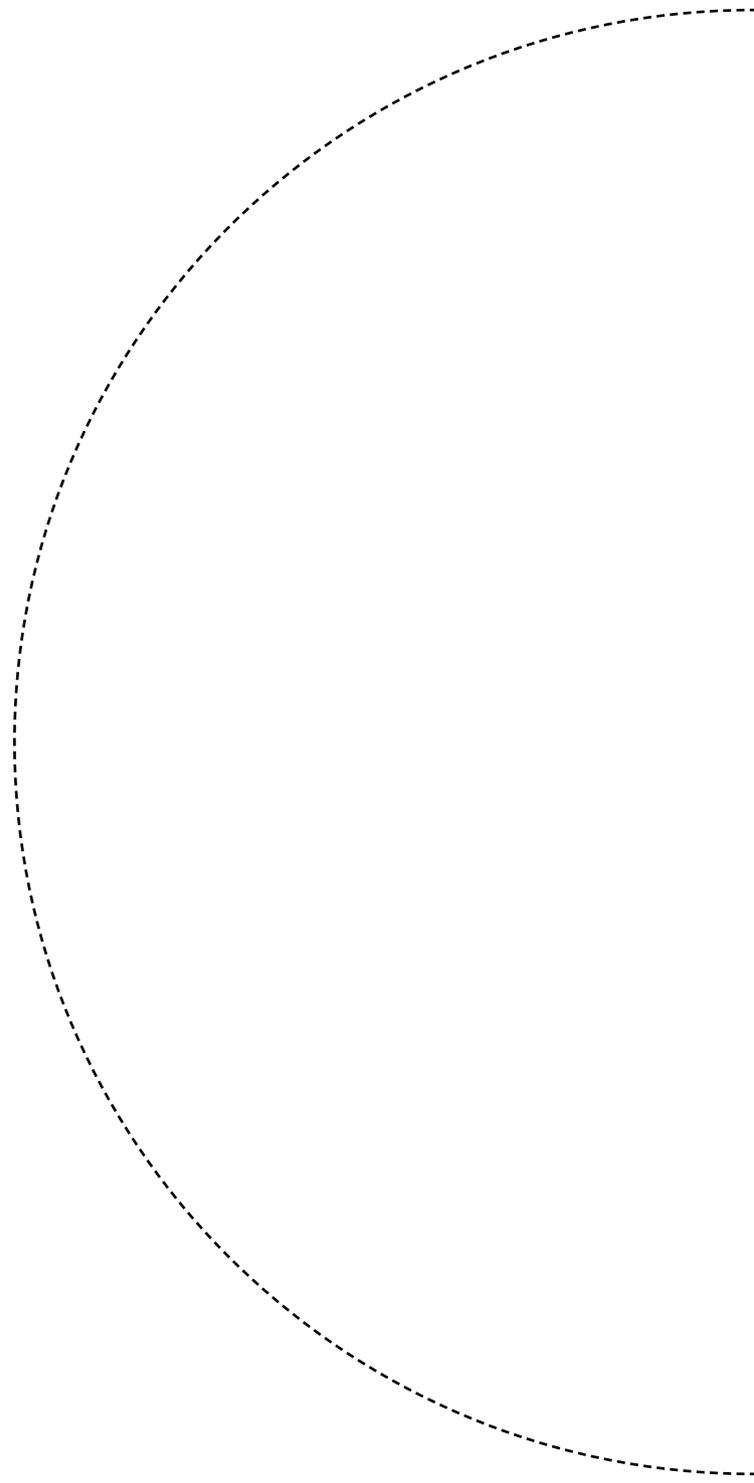
In modern society, tranquility is becoming a much-desired yet hard-to-obtain commodity. Increased work and family responsibilities and overwhelming sensory control in urban environments, where psychological stress and anxiety are daily, creating a moment of stillness and purity, are becoming increasingly important.

A Garden is an enclosed space where architecture and landscape come together, from the legendary Babylonian sky gardens to the early paradisiacal gardens to medieval monasteries to the modern era as a stage in the development of society. In the ongoing development of the garden, humanity has translated its reverence for nature into indoor spaces, not to play down nature but ● to connect it. The mythological and religious background of the garden has led to its use as a spiritual escape from the real world in many different cultural contexts.

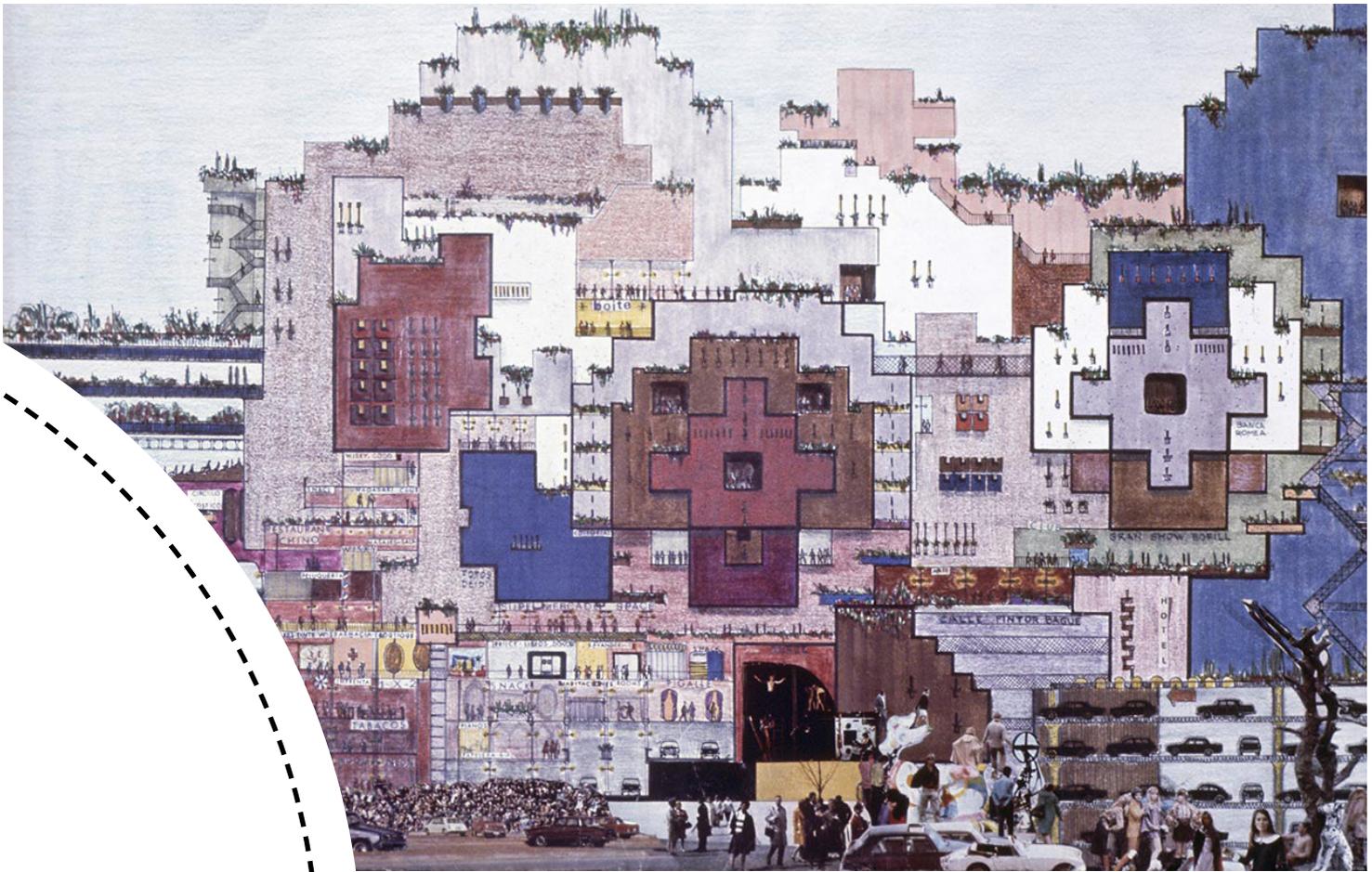
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In the middle age, 'Hortus Conclusus' was a popular style of garden which means 'enclosed garden. Hortus Conclusus protects the interior precinct, creating a protective barrier and bringing nature within its wall.

Drawing on 'Hortus Conclusus' gardens, this paper discusses the possibility of finding inner peace through the architecture of public gardens in urban centers within the confines of high-density metropolises.



TRANQUILITY AND CITY



La Ciudad en el Espacio,
Ricardo Bofill and Taller de Arquitectura,
1970²

TRANQUILITY AND CITY

SILENCE IN NEED

In modern society, tranquility is becoming a much-desired yet hard-to-obtain commodity. Increased work and family responsibilities, coupled with overwhelming sensory control in urban environments, where psychological stress and anxiety are common, create a moment of stillness and purity that are becoming increasingly important.

Social Stress

In the information explosion of the Internet era, short video applications such as Instagram, Facebook, etc., are eroding people's ability to access long, complex information and even contemplate. People live hectic lives dominated by screens, confusing information, and overwhelming entertainment.

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Urban noise and visual overloading

Too much noise can lead to superficial interpersonal relationships (Juhani Pallasmaa, 1996)¹. Excessive building density in the city means excessive pressure on the eye experience, leading to a sense of exteriority within society, a sense that leads to superficial socialization of people in the city.

It can also be explained by the fact that so many people in the city that to cope with this vast social demand, people's communication is superficial and has been described as 'secondary contact' (Louis Wirth, 1938)². In sparsely populated rural areas, on the other hand, human contact would be much more intense as most of it was 'primary contact'.

¹ Pallasmaa, J. *The Eyes of the Skin: Architecture of the Senses*. Wiley, 1996.

² Wirth, Louis. 1938. 'Urbanism as a Way of Life'. *American Journal of Sociology* 44 (1): 1-24. <https://doi.org/10.1086/217913>.

Heinrich Hermann (2005) describes the contemplation as an inner silence, and the silence here to be understood not only in the acoustic sense but as the absence of all distracting sensual stimulation. "I propose that this silence-inducing capacity could be interpreted as a visceral, unmediated response to certain stimuli encountered within the environments that absorb one's undivided attention – while being perceived as peaceful and soothing" (Heinrich Hermann, 2005)¹.

A contemplative environment provides a beautiful place to relax and allows one to be inspired and enriched by the encounter. He argues that external stimuli trigger contemplation and evoke memories of an individual and collective life that has gone too far.

From a medical point of view, the ability to enter a meditative state is inherent in the human psyche².

5 Nevertheless, we are in an age of so much sensory stimulation that this ability has deteriorated in everyday life. Reducing external stimuli helps to provide external silence, thus slowing down the mind in favor of inner reflection.

¹ Hermann, Heinrich. n.d. 'On the Transcendent in Landscapes of Contemplation', 37.

²Typically assigned tasks in biofeedback include reducing muscle tensions, lowering the pulse rate, and lowering the body temperature (all in response to the graphic and acoustic "biofeedback" given by a TV monitor). In the experience of the Biofeedback Unit of Harvard's Health Services, there is an apparently universal latent ability to achieve results, but it typically takes six months of consistent practice for a novice to do so, using any kind of meditation system. (From notes taken during a session with Ellen Haley, director, December 2, 1988.)

SILENCE IN THE CITY

There is the presence of tranquility in our daily life. Finding silence could be challenging when living in a big city. Although you still can find some quiet places in the city, like libraries, museums, or churches, these are all part of the interior spheres. At the same time, finding nature in the cities is always possible. All the cities have parks, flowers, trees, and fountains, usually cheerful and relaxing.

Ritual & space

The sense of silence in the interior space mainly comes from ritual.

For example, Libraries (Figure 1). Book displays, decorations, and installations in a physical library relate the space to knowledge. From the moment one enters the library, one unknowingly expresses the attitude towards knowledge - the sanctity of knowledge.

The sense of ritual is also acquired through socialization and reinforced by the constant ritual rehearsals: parents instruct their children to keep their voices down when entering the library so that the children can perceive the role they will play and transform their identity upon entering. As long as society exists, some spaces will always have a specific sense of ritual.

Parks

A form of nature that is accessible to urban residents is large city parks. City parks are derived from a country setting of nature where the phenomenon of silence is readily experienced.

The medieval park was used as a private domain to proclaim the wealth and status of the owner, but with the industrial revolution, the park was given a new meaning. An area devoted simply to green landscape, a salubrious and

attractive breathing space as a relief from the densely populated and industrialized city of the mid-19th century, became necessary. The creation of the city park at that time was to benefit the greater community by allowing the working class to gain fresh air, relax in a pleasant setting, and experience a mental retreat. City parks bring nature into the machine-driven city and are seen as a way to rid the city of grime. The pioneer of the city park trend, New York Central Park (Figure 2) was the first large park explicitly built for the public's enjoyment, not for the aristocracy.

Today, city parks are a healthy recreational destination and a space for negligent behavior. Crime and unstable behavior are often associated with these spaces, while poor management and the overly open nature of the space result in it not always being a safe and stable space. The atmosphere of parks could be more relaxed and more relaxed and chaotic. Despite their success in urban planning, city parks do not provide a stable, contemplative spiritual space or a garden of Eden for residents to escape the physical and psychological chaos of the actual city. Overall, we need both parks and gardens.

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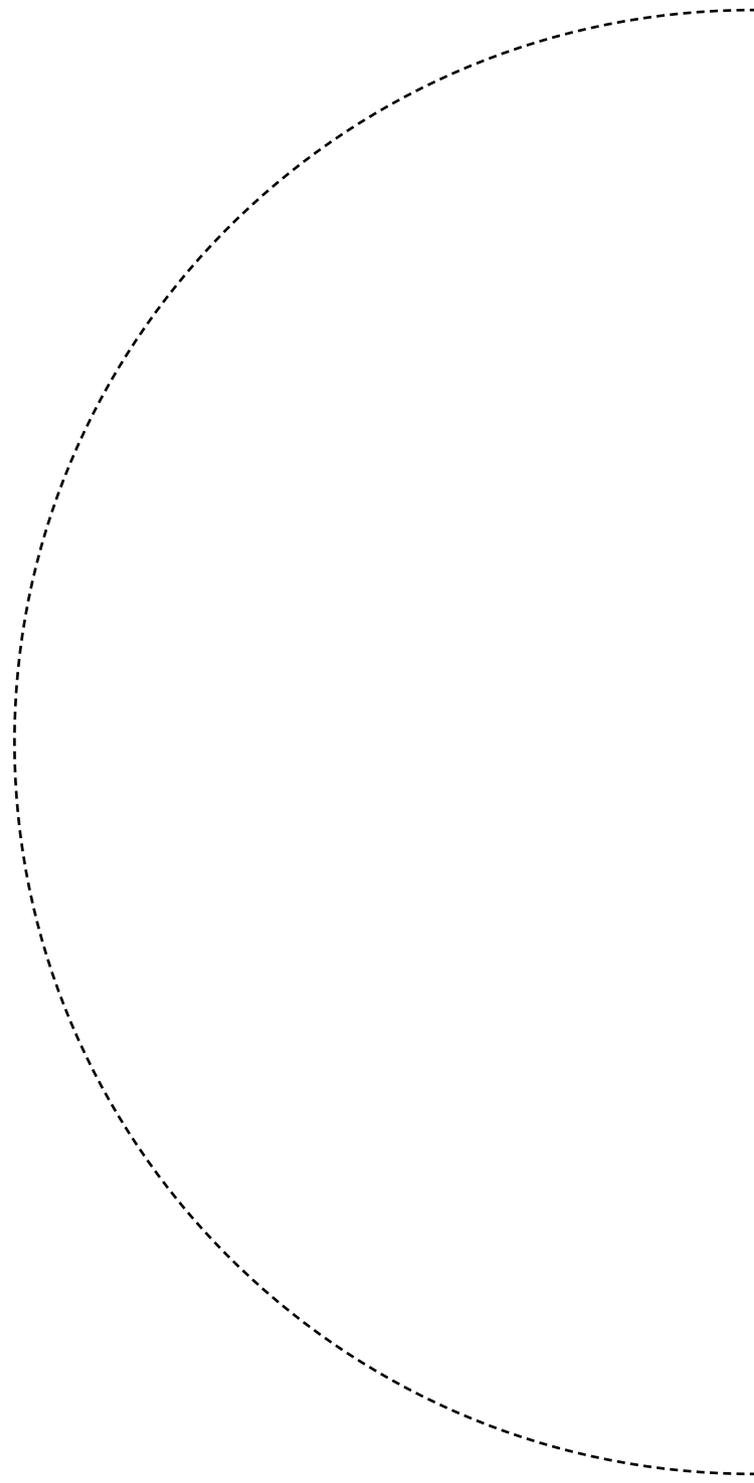
Figure 1: A sectional view of the New York Public Library³. (Fosco Lucarelli, 2011)



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Figure 2: A color landscape photo of the ice skaters at Wollman Rink in Central park in winter, New York City, Photograph by Andrew prokos, courtesy of the Creative Commons License







Madeleine de Boulogne,
Cloître de Port-Royal des Champs⁴

' HORTUS CONCLUSUS ' AND CITY

The modern word 'GARDEN' or 'YARD' comes from the Frankish 'gardo' (Fenced-in yard), the Proto-Germanic 'gardaz', and the Old English "geard". In French, the garden is written as 'Jardin poragar'. In any context, it is defined as a fenced-off space separated from the wild environment. In caring for the vegetable garden, one discovers the vibrancy and beauty that plants bring. Afterward, the garden was planted with plants. At that time, gardens existed mainly to satisfy 'fruitful appetites'.

7000BC, an Egyptian king called Ramses orders servants to grow him a garden. He changed the garden's future and made the gardens more than a thing of necessity. It is now about beauty and leisure.

Gradually, ancient Greek philosophers began to debate in open gardens (parks). From Plato and Aristotle to Epicurus, gardens became places where philosophers engaged in conversations and explored the meaning of life. Here, away from the hustle and bustle, people were immersed in scholarly exchange, and a multitude of bold imaginations, and profound ideas, were born from this enclosed space. **10**

As the popularity of religion grew, gardens became places of prayer, meditation, and worship for people's faith. The garden's design also became increasingly religiously ritualistic, full of various symbols and mythological stories projected in real life.

By the 11th century, gardens were labeled hedonistic, and many artworks were taken from them. Unlike the religiously charged gardens of the Middle Ages, gardens (Hortus conclusus) were no longer symbols of purity and innocence, and themes of love, desire, and temptation also appeared in

the context of gardens.

Regardless of the change in context and function, the essence of the garden is a utopia, a garden of 'Eden', created by people in real life. It is an artificial landscape created through artistic reflection.

In any context, the garden can serve as a physical carrier of people's spiritual needs.

This chapter discusses those buildings that have provided tranquility, both historically and contemporary, and the importance of the architectural form of the religious garden as a reference point in creating tranquil spaces.

11 From the origins of the garden, the etymology of garden implies that gardens and towns have been associated with each other from their origins. By the Middle Ages, monasteries offered an escape from the darkness of political rule, and the architectural forms that arose from religious influences provided the calming character of interior spaces. Finally, the analysis presents a case study of contemporary cities where attempts have been made to recreate tranquil spaces in the city through enclosed natural spaces.

ETYMOLOGY

How can we define a garden? Humphry Repton wrote in his <Fragments on the theory and practice of landscape gardening> in 1816:

'Let us, then, begin by defining what a garden is, and what it ought to be. It is a piece of ground fenced off from cattle, and appropriated to the use and pleasure of man. It is our ought to be cultivated'¹.

Turning to the Oxford English Dictionary, a garden is defined as:

' A piece of land next to and belonging to a house, where flowers and other plants are grown, and often containing an area of glass'².

Indeed, from an etymological point of view, the garden defines itself by its fence. (Figure 6) It is expressed in European languages, **garden* and **town* (another word that means enclosure), and their intertwined relationship³.

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'garden'

The garden is described first and foremost as enclosed, cultivated ground, and it originated in the same root as the Old English **geard* (fence). The **geard*, developed into the Modern English **yard*, and the Middle English **Gardyne* (first recorded around 1300) via Old Norman French **gardin*.

Furthermore, there are Indo-European **gher* (fence) and **ghort* (enclosure); the Latin word **hortus* also means garden; the Russian **gorod* (fence) came to mean enclosure and hence town, as we can see in the place-names such

¹Repton, Humphry, and J. Adey (John Adey) Repton. 1816. *Fragments on the Theory and Practice of Landscape Gardening : Including Some Remarks on Grecian and Gothic Architecture, Collected from Various Manuscripts in Possession of the Different Noblemen and Gentlemen, for Whose Use They Were Originally Written; the Whole Tending to Establish Fixed Principles in the Respective Arts.* London : Printed by T. Bensley and Son ... for J. Taylor ... <http://archive.org/details/fragmentsontheor00rept>.

²"garden." Oxford Reference. ; Accessed 15 Jan. 2023. <https://www.oxfordreference.com/view/10.1093/oi/authority.20110803095842947>.

³Erp-Houtepen, Anne van. 1986. 'The Etymological Origin of the Garden'. *The Journal of Garden History* 6 (3): 227-31. <https://doi.org/10.1080/01445170.1986.10405170>.

as Novgorad, the Russian also have a word **ogorod* means vegetable garden (literally fenced in, enclosure).

'town'

And the 'town' meaning of Slavic **grad/gorod*, which reminds me of the English word **town*. Town comes from the Old English **tun*, which means fence in Old High German, and it already means enclosure, yard, farmstead.

Early in Anglo-Saxon times, **tun* took the meaning of 'a cluster of buildings in an enclosure' and then 'village'.

'tuin'

The dutch word of the garden **tuin*, which comes from the tean, means a jig area bounded by a wickerwork fence of willow twigs.

The verb **omtuinen* is also close to its root and means 'to put a fence around a piece of ground'.

'園'

13 If we adopt Mr.Tong Jun's (園) interpretation of the word, '園' means integrating various elements such as houses, ponds, woods, pavillions, hills, and rocky peaks within the enclosure.

'paradise'

When back to the earliest garden, as Francis Bacon puts it: 'God, himself planted'. The old Persians had large gardens with roses, which were called 'wide gardens' or **pairidaeza*(enclosure garden), where the word Paradise comes from.

Word like Paradise, tuin, Hortus, etc. came from the old words, which means fence or enclosure. And some of the words developed into the garden, and in another cultural background, they come into town. Possibly medieval gardens and early towns, both were essentially enclosures.

The fence is the primary and essential feature of the garden, and the relationship between the garden and the city is inevitably linked.

MONASTERY GARDEN

Historically, places of contemplation and tranquillity in the Western urban environment have come primarily from mythological and religious places of worship. However, it is well known that gardens have evolved from plantations along the way with social context and cultural changes, and as a space isolated from the outside world with nature, gardens are still usually dominated by a relaxed and pleasant atmosphere. How, then, religion influenced the garden to give it a tranquil, contemplative atmosphere will be discussed in this section.

In Abrahamic religions, the garden of Eden is the biblical paradise described in Genesis. In the Persian desert, the model of an ordered paradise emerged, with walls around it to keep out the unpleasant world.

Persian literature often shows how people interact with gardens, and earthly incarnations of paradise, providing space for poets to reflect on nature and life. Unlike gardens in other religious contexts, water is a critical element in Persian and even Islamic gardens, providing dynamics and sound to the tranquillity that encloses them.

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Known as 'Chahar bagh' (Figure 8), these walled spaces tended to follow a strict plan that fanned out from a central fountain. At this central point, four rivers or water courses met, representing the four rivers of paradise. This cross-divided garden plan gradually evolved into one of the primary forms of the later religious gardens.

During the Middle Ages, the enclosed gardens showed different appearances in monasteries, the castles, and cities, like the elite pleasure garden, A grid of different plant species, and a monastic cloister.

A Hortus conclusus is a popular garden style in the middle ages. "Hortus conclusus" originates from the Song of Songs and refers to the Virgin Mary. (Figure 9) It is Latin for enclosed garden and is often used in medieval and Renaissance poetry and painting as a sacred and pure space while implying impenetrability.

Hortus conclusus is a space surrounded by a gallery, connected to the sky in the middle, around which the monastery unfolds depicting a hierarchy with God at the center of the universe. This archetype protected the private precinct, creating a protective barrier, and bringing nature within its wall.

During the Middle Ages, monasteries were spread throughout Europe. The monasteries were independent, meaning the monastic community provided everything the monks needed. (Figure 3) The monasteries generally had strict rules, while the monks' daily schedules were set, with most of their

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time spent in seclusion and prayer and the rest of their time spent in labor. Depending on their talents and interests, the monks perform different tasks such as gardening, washing clothes, cooking, maintenance, etc. (Figure 4,5) They also provide educational opportunities for the surrounding community. Thus, in addition to the atrium garden for reflection and prayer, they usually have a vegetable patch. Spaces of similar function form an area, and the whole building is often grouped together in several large cloisters. There are some strict monasteries in which the monks live separately in their own cells, each providing working space and a small vegetable garden, and they are left alone except during the public hours of prayer in the church.

Similarly, cases of religion and gardens interacting and forming different spaces of tranquillity can be found in other cultural contexts, such as Chinese hermitage architecture and Japanese Zen gardens.

Figure 3: The Jansenist abbey of Port-Royal des Champs near Paris

Magdeleine Hortemels,
Plan de l'Abbaye de Port-Royal des Champs⁵

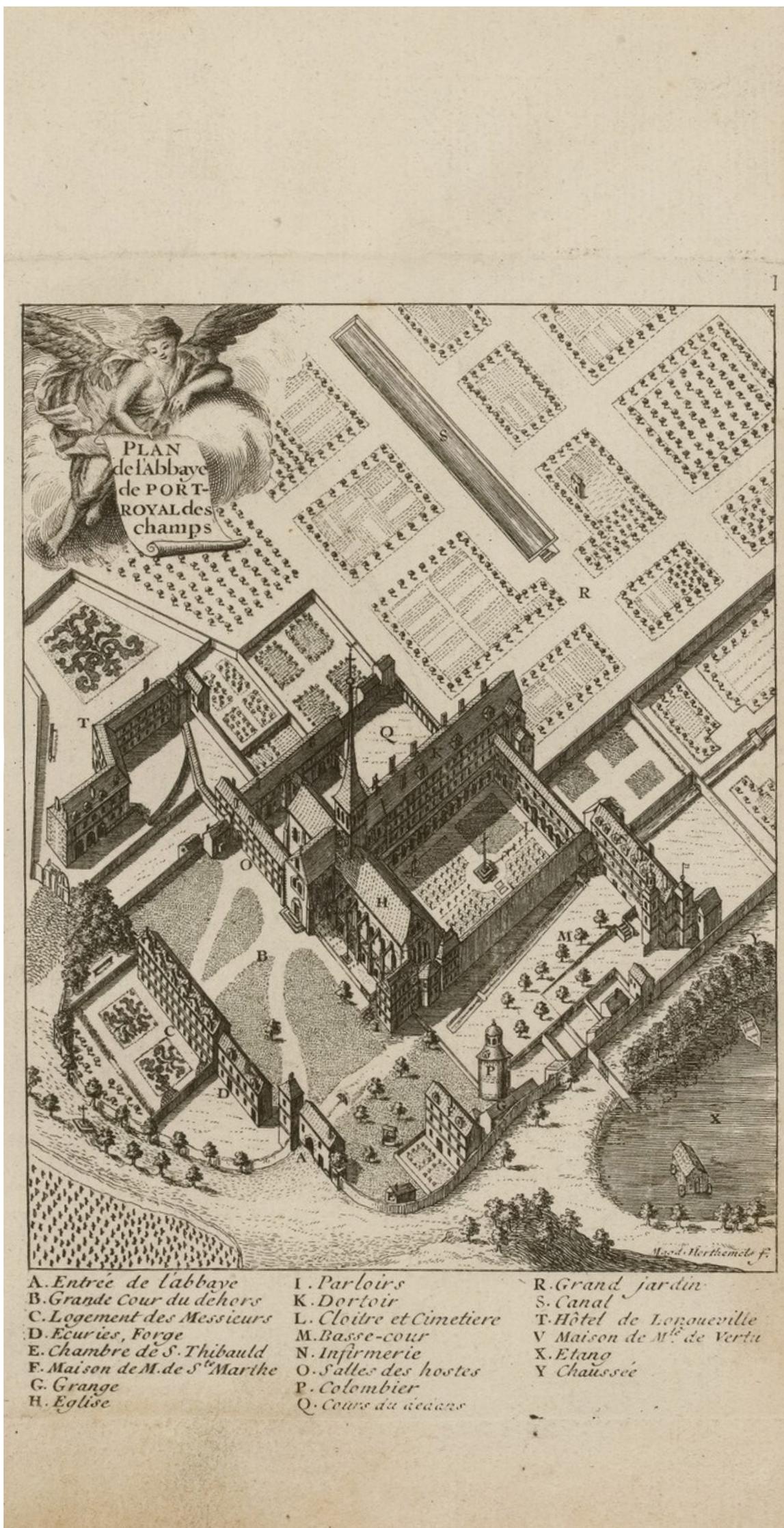




Figure 4: The daily activities of the nuns in the abbey⁶
Madeleine de Boullogne,
Solitude de Port-Royal des Champs

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Figure 5: The daily activities of the nuns in the abbey⁴
Madeleine de Boullogne, Procession à
Port-Royal des Champs

Religion

Christianity is the most prevalent religion in Europe; prayer is the predominant religious act in Christianity. In monasteries, monks often gathered to pray, and the silence inspired by prayer was a way of communicating with God. However, in ancient times prayer was said out loud, as it was thought that quiet prayer was an attempt to cover up one's sins. Only after the Platonists and their influence from values of Transcendentalisation the silence become the 'purest form' worship. (Pieter W. van der Horst 1994)

Ritual is an ancient and widespread cultural phenomenon in human societies, derived from the Latin word 'ritus,' which refers to a series of activities that express values and meanings but have a repetitive pattern and regularity (Rook, Dennis W., 1985). Rituals can be found in both religion and everyday life, such as the repetition of a series of actions upon waking up each day or in the customs of traditional festivals. These rituals or ritualized acts increase self-awareness and discipline while also providing a sense of relaxation, calm, and belonging. People have gradually abandoned rituals as a result of the secularization of modern civilized life. The absence of such rituals has serious consequences for humans, including depression, obesity, and alcoholism (Singerhoff, L., 2006). Synthesizing previous research (Brooks et al. 2016), the concept of ritual has three main points:
1. process-like action 2. symbolism 3. non-functional behavior.

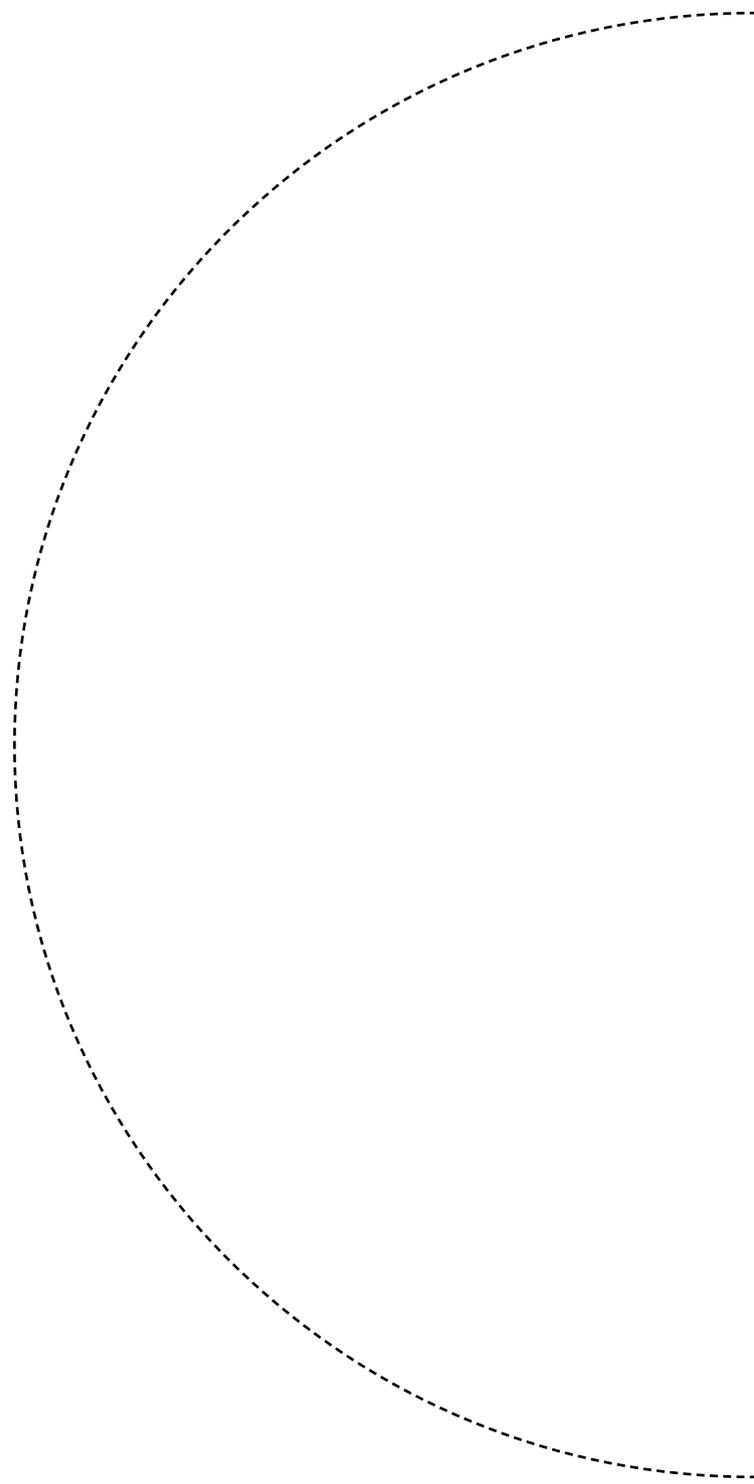
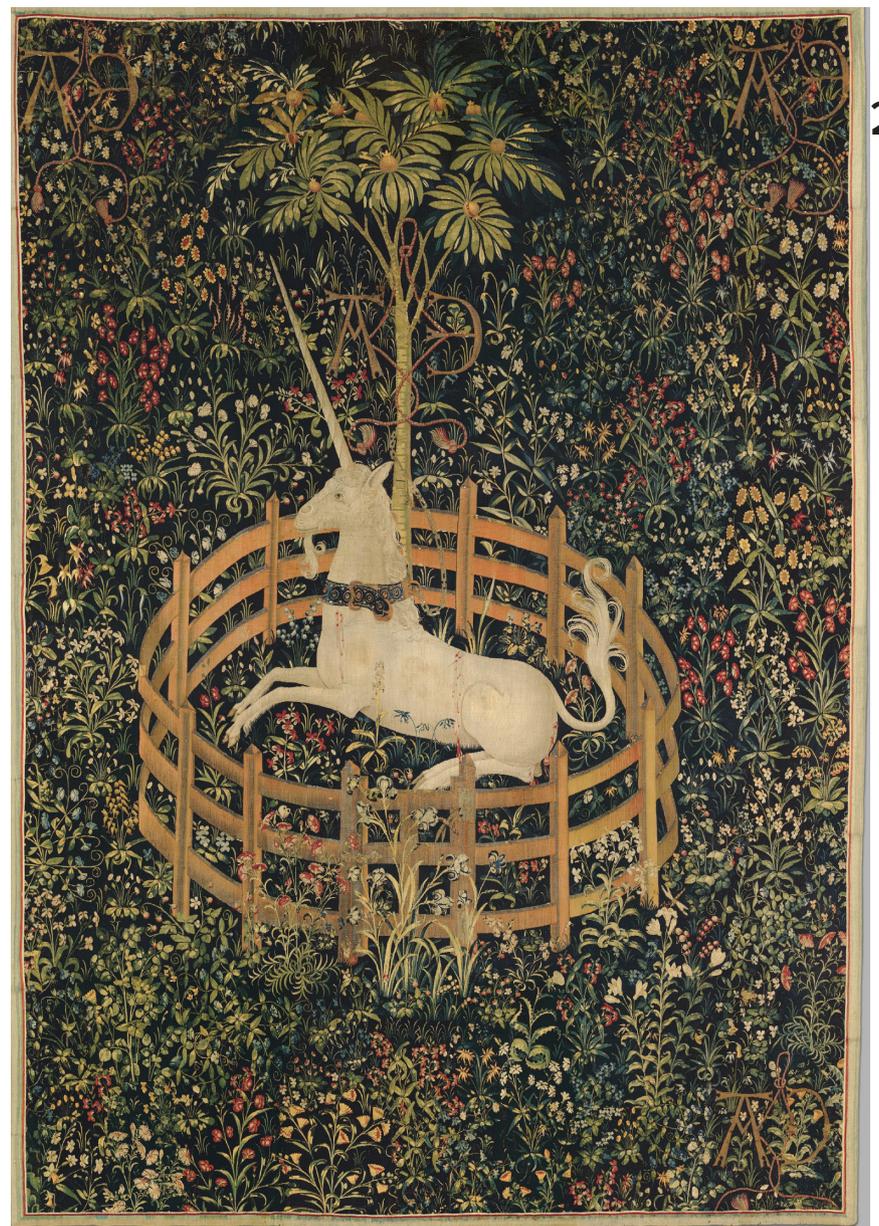


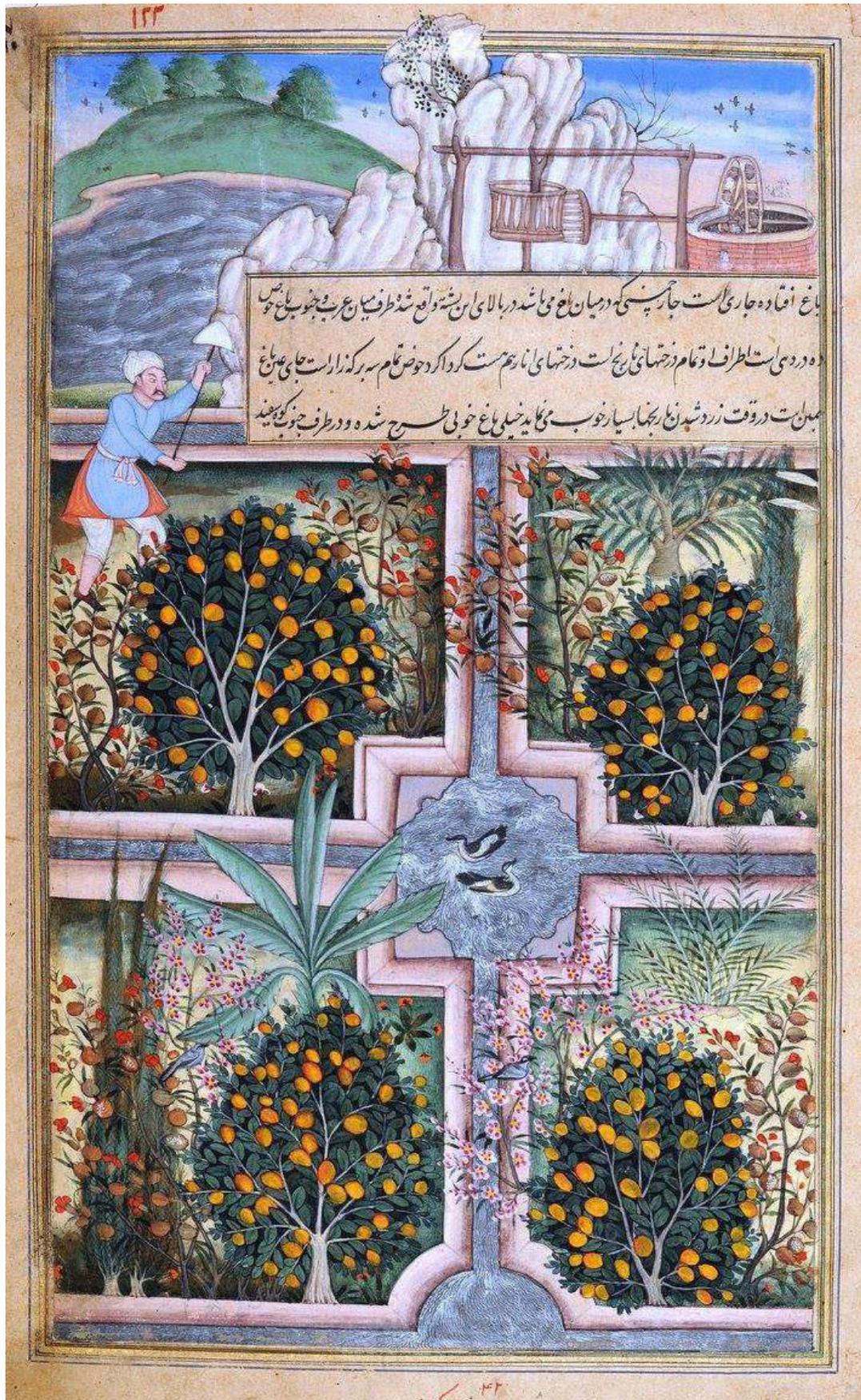


Figure 6: 'Like a rose in spring thrives under the face of the sun, so shall I bloom when God foresees me'
 Arnhem, J. Ianszen, 1615.⁷



20

Figure 7: The Unicorn in Captivity (from the Unicorn Tapestries)⁸
 1495-1505



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Figure 8: 'Chahar bagh'⁹

'And a river went out of Eden to water the garden; from thence it was parted, and became four heads. The name of the first is Pishon; that is it which compasseth the whole land of Havilah, where there is gold; and the gold of that land is good; there is bdellium and the onyx stone. And the name of the second river is Gihon; the same is it that compasseth the whole land of Cush. And the name of the third river is Tigris; that is it which goeth toward the east of Asshur. And the fourth river is the Euphrates.'



Figure 9: The Little Garden of Paradise¹⁰,
 The subject of this painting is 'Hortus Conclusus', a gathering in paradise attended by the Virgin and Child and several saints. A garden in which 24 species of plants and 12 species of birds can be identified.
 ca. 1410 - 1420

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"A garden enclosed is my sister, my spouse; a garden enclosed, a fountain sealed up."(Hld 4,12 LUT).

Figure 10: The Trie Cloister Garden¹¹

The Trie Cloister Garden evokes the idealized gardens and landscapes of the Middle Ages. Most of the plants on the Unicorn carpet are grown here.



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Figure 11:
Mariavall Abdiij in
Zweden,¹²
Hans van der Laan
Modern Monastery

Contemporary architecture on the theme of tranquillity

Nowadays, under the pressure of the urban environment and mental stress, people are gradually reawakening to the importance of tranquillity. However, due to secularisation and modernization, religion is less influential in contemporary society than it was in the Middle Ages. How people in contemporary society seek a traditional spirituality and inner silence. From Figs. 12 to 21 are some examples of contemporary cities that attempt to lead people to contemplation or create spaces of tranquillity.



Figure 12: Serpentine Gallery Pavilion, Peter Zumthor, 2011, (Dezeen, 2016)¹³



Figure 13: Villa Além, Valerio Olgiati, 2014 (ArchDaily, 2015)¹⁴





Figure 14: St. Benedictusberg Monastery in the Netherlands, Dom Hans van der Laan, 1986¹⁵

Dom Hans van der Laan is a monk and architect. During his stay at the monastery he tried to find an aesthetics of architectural proportions and developed a theory of numerical relationships. His answer to why houses are built:

'The house is not just about the contact of the foot with the ground, but about the encounter of our whole existence with the entire natural environment. The means by which harmony is established between the two is a 'piece of habitable space', which we separate from the natural space by walls. We should think of the house as an addition to nature, a completion of the natural space to make it habitable for us.'

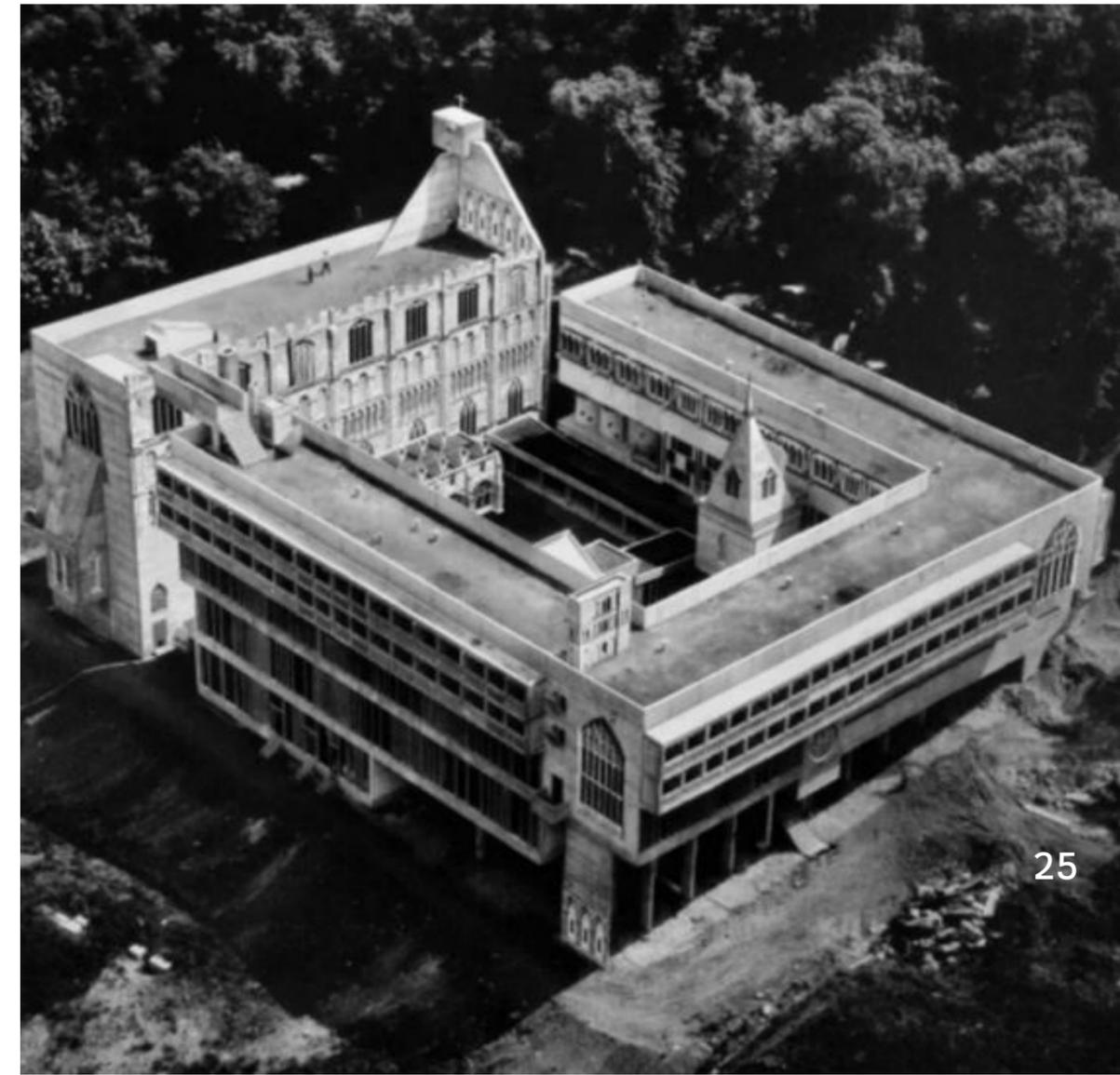
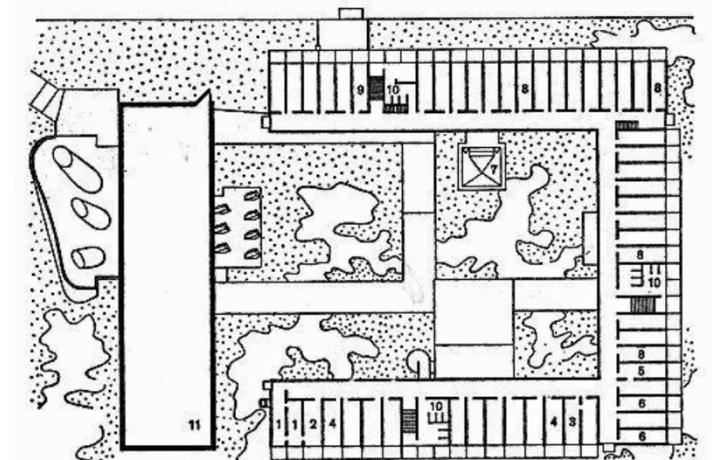


Figure 15: Convent of La Tourette, Le Corbusier (ArchDaily, 2010)¹⁶



Cell floor
 1 Cells for the sick, 2 Nurse's cell, 3 Cells for visitors, 4 Fathers' cells, 5 Cell for the monk in charge of the student brothers, 6 Student priests' cells, 7 Oratory, 8 Student brothers' cells, 9 Lay brothers' cells, 10 Sanitary offices, 11 Church



Figure 16: Infinite Landscape Pavilion, Ryo Yamada¹⁷
(Archidaily, 2022)

As shortening the time it takes to reach a destination becomes increasingly important in contemporary times, this space aims to encourage people to rethink and reflect on how far they have come, or what has just passed. Visitors head for the Corridor via a 0.6 m-wide, total 27 m-long passage, some taking their time and walking in a straight line, others occasionally looking back to confirm the path they have taken.



Figure 17: Bruder Klaus Field Chapel, Germany, Peter Zumthor, 2007¹⁸



Figure 18: 'Come on, Calm on', Shma

(ArchDaily 2021)¹⁹

'Come on, Calm on,' a new project under the ThongEk Creative Neighborhood, represents how people can "open up" to new possibilities in design to overcome today's chaotic world through a healing process that uses nature as a means of healing.



Figure 19: 'Inbetween Pavilion', Pontoatelier (Archidailiy, 2020)²⁰

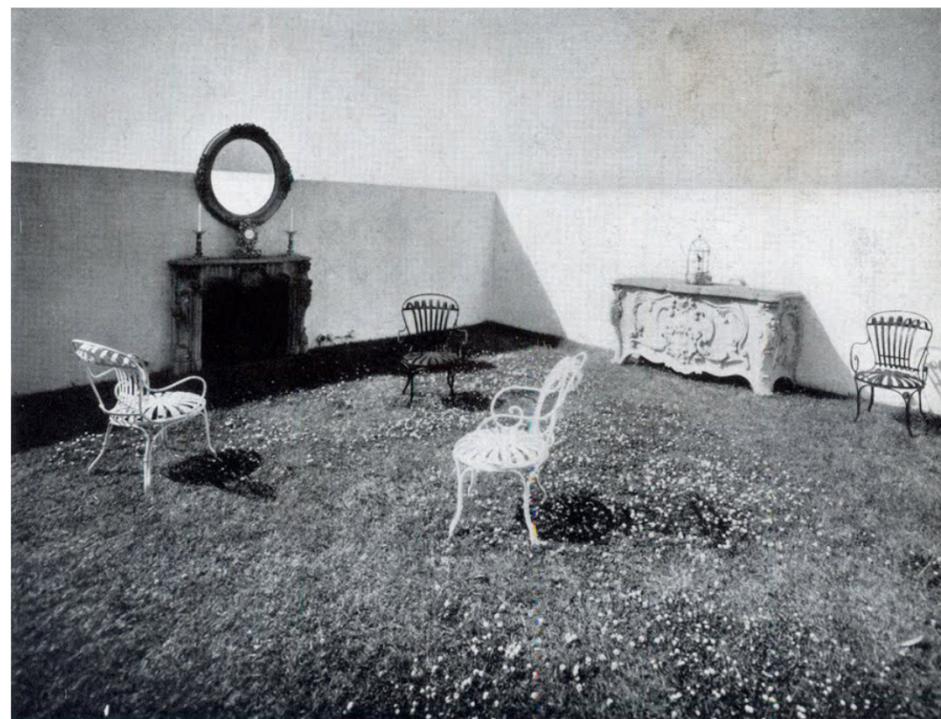
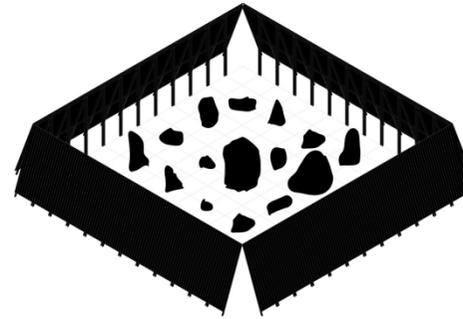
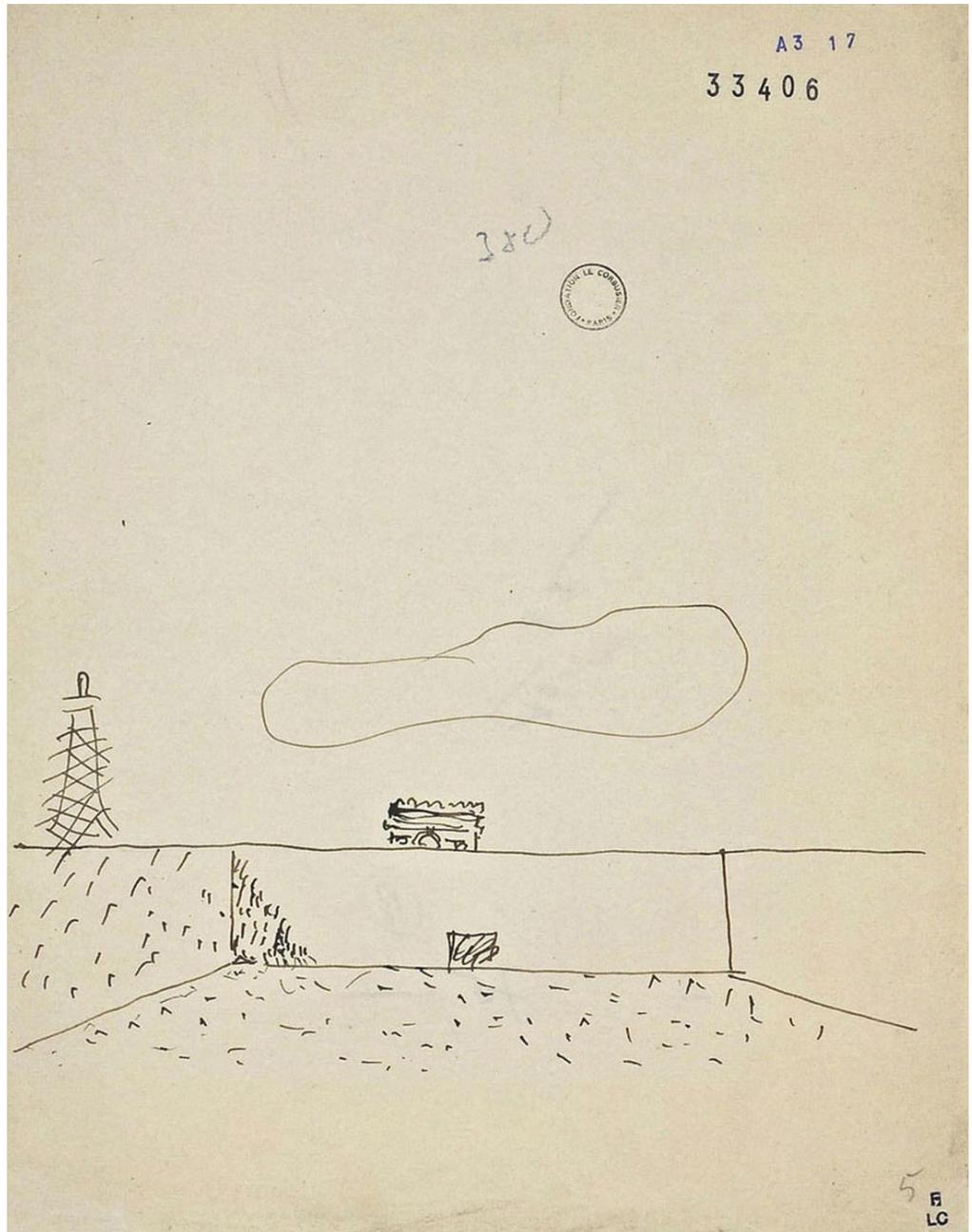


Figure 20: The roof garden of the Charles de Beistegui apartment, Le Corbusier, 1929²²



Figure 21: National Library of France (Archidailiy, 2011)²¹



Sketch of the roof garden of the Charles de Beistegui apartment, Le Corbusier, 1929²²

MANIPULATION TRANQUILITY

This section focuses on how architectural elements can be manipulated to provide a sense of tranquility. From the previous history and case studies, the garden, as a phenomenon that has been around for thousands of years, may have been considered a physically and spiritually beneficial place from the very beginning. The enclosed nature of the garden is the basis for providing a tranquil space, and the enclosing walls make the interior more secluded, providing a sense of security in which to contemplate alone. The scale of the garden architecture, the process of entry, the materials of the garden, and the types of plants inside will also be discussed in this section.

At the same time, spatial sensations cannot be discussed separately from the various sensory experiences - visual, auditory, and olfactory. For most visitors to the garden, sound and smell are central to the experience. Apart from analyzing the physical acoustic environment, something as ephemeral and subjective as sound and smell understand primarily through the visual medium and words, i.e., poetry.

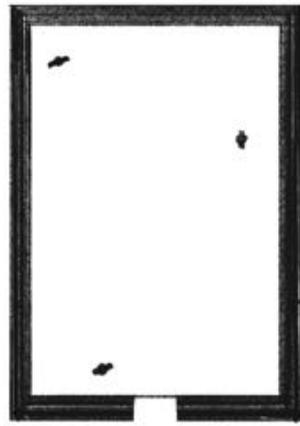
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Form

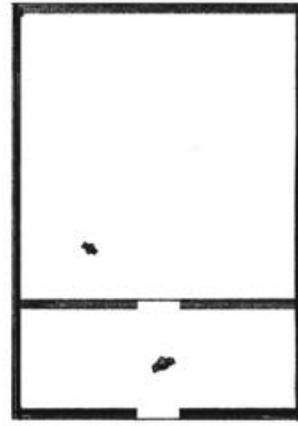
The cases of the Tranquility Garden, from the Middle Ages to the present, invariably show the inward orientation of the spatial composition while retaining a connection to the sky. The physical enclosure serves as a structure introduced into an indeterminate natural space, organizing the surface on the one hand and giving form to the space on the other. The most classical form of the enclosure is the wall, which controls the interaction between the outside and the inside within manageable limits, and the entry process is worth discussing. The figure 22 exemplifies the planes of different entry processes. It can be concluded that the conscious entry process can be divided into two points: 1 Different spatial densities inside versus outside, e.g., artificial environment versus natural space, the sound of a car versus the sound of birdsong. 2 Turning the momentary action of entering into a process of a certain length of time. The perceptibility and solidity of the wall provide a sense of security inside the enclosure.

30

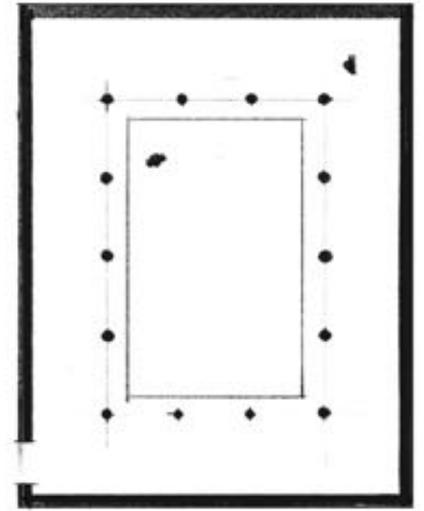
Figure 22: Plan Collection



(a) Sick wall



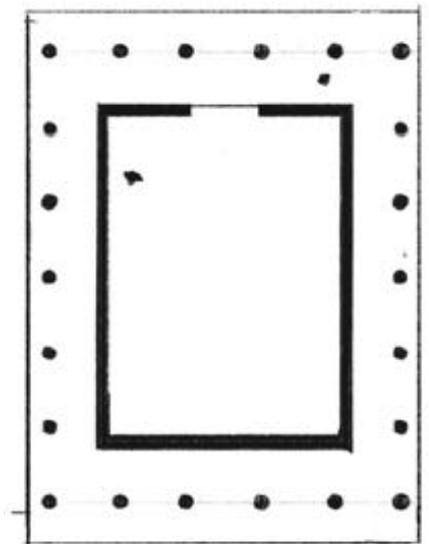
(b) Palazzo plan
Symmetrical planes
Ritualistic entry
Visual Throughout



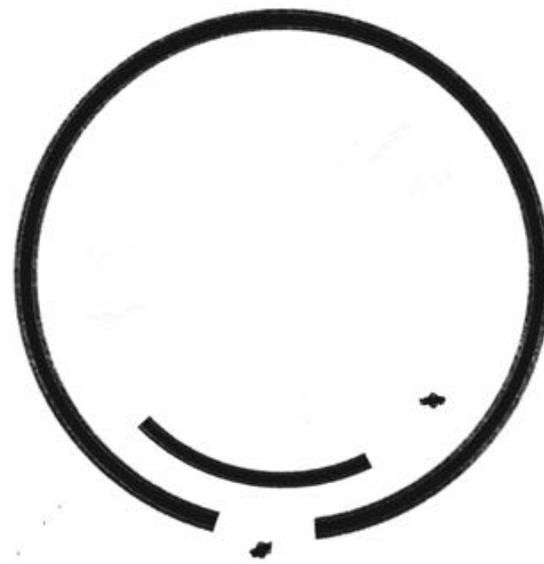
(c) Monastery plan
Corridor



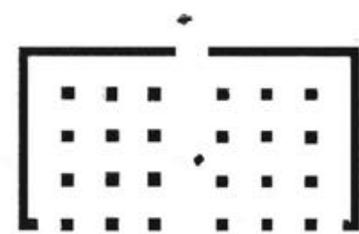
(d) Peter Zumthor's Hortus Conclusus



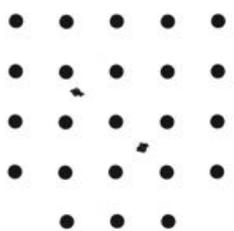
(e) Roman Forum Temple



(f) Castle patio



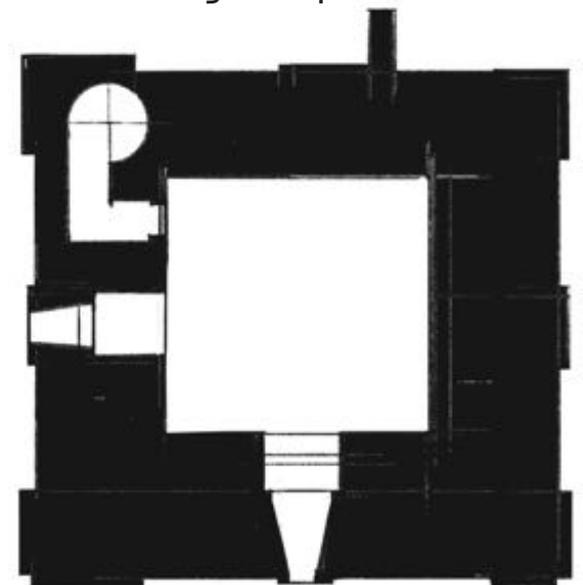
(g) Temple



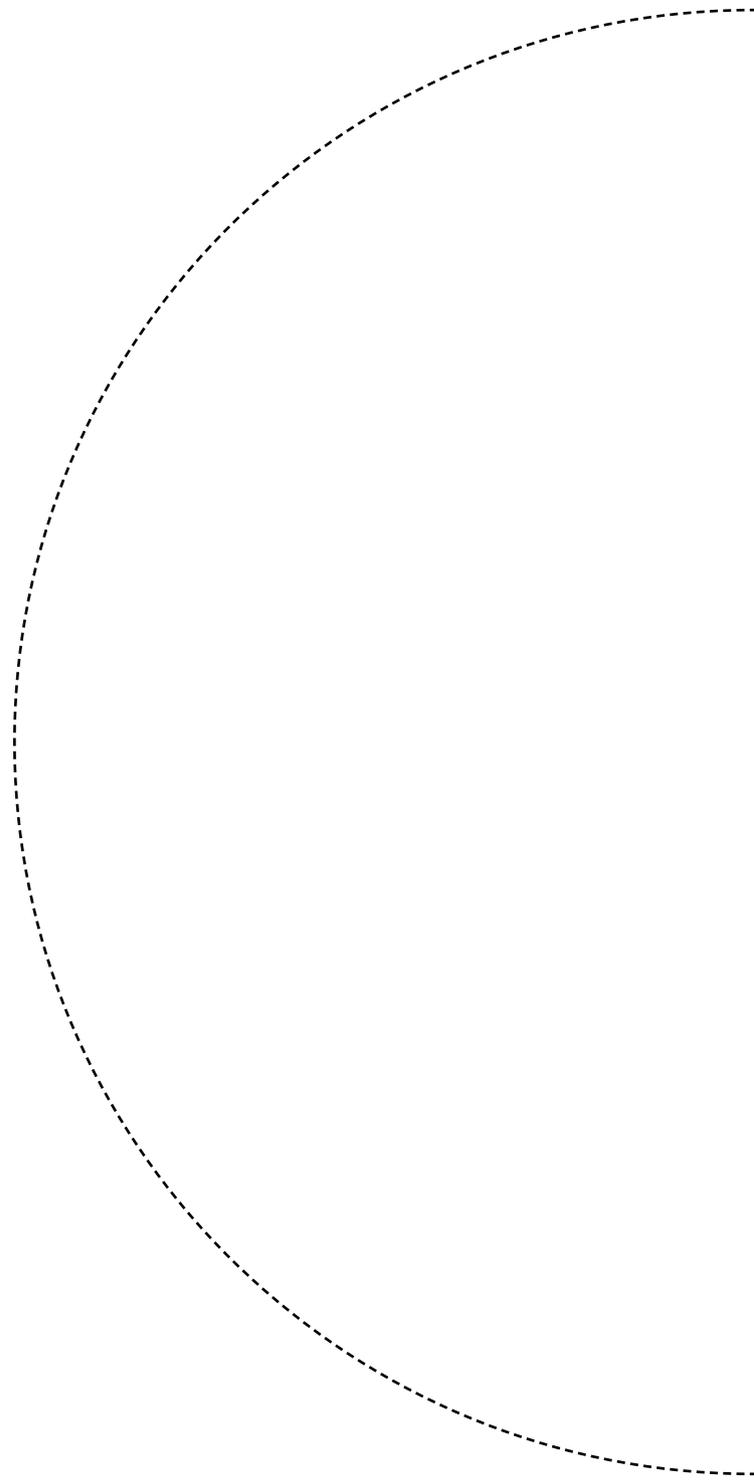
(h) Columns Cluster 2



(i) Columns Cluster 1



(j) Castle patio



View Boundary and Scale

A person's horizontal field of vision is much broader than their vertical field of vision; if a person looks forward, they can observe what is happening in a horizontal range of nearly 90° on either side. However, the optimum range of the human visual field at vertical angles is 10° up and 30° down from the horizon. (Jan Gehl, 1971)

(Figure 23) Thus a person walking down the street can only see the ground floor of a building, the pavement, and what is happening in the street space. Suppose a person is in a garden, 10 meters from a wall then a wall height of 4 meters or more shifts the person's view to the wall, blocking out the city outside and dividing the visible world into an internal and external world. (Figure 24) The height of the wall is related to the distance between the person and the wall, i.e., the spatial scale, according to the range of the person's field of vision, and a ratio of wall-to-space length greater than 0.4 is more reasonable.

32

The window, as a passage between the internal and external worlds, offers the possibility of one-way communication with the external world. (Figure 25) In the case of Villa Além (Olgiati, 2014), the windows in the wall are large. Although it is perfectly possible for a person to pass partially through them, the setting of the windows themselves determines the separation between inside and outside, i.e., they frame a specific view and, at the same time, they set the position for a person to enjoy.

However, the person can only look but not interact. In addition, in this case, the inward or outward slope of the upper part of the fence gives the wall extra thickness and creates shadows on the wall.

As seen in New York's Central Park and the Bibliotheque National de France, oversizing can reduce the sense of

enclosure and, therefore, the sense of security within it. Thus the size of the plants and the enclosing buildings in the Bibliotheque National de France have been relatively enlarged to maintain the feeling of enclosure within them, but the pine trees transplanted in the atrium section have so far not grown to their ideal lushness. So too large a scale is also unsuitable for excellent and timely management and maintenance.

33 If the intention is not only to provide a place to relax but for those inside to put down their social media and reflect, then the scale of the space must be manageable. Some gardens that offer a sense of tranquillity make people feel safe and thus able to think in them because they have an internal scale, with floors, walls, and a sky that acts as a ceiling. Here, according to some data on social viewsheds and social distance, at a distance of 70-100 meters, a person's gender, age, and behavior can be roughly distinguished from this distance; at around 30 meters, facial features, hairstyle, age, etc. can be accurately identified; closer to this, at 20-25 meters, a person's expressions and emotions can be distinguished, and it is at this distance that meetings begin to take on a social (Jan Gehl, 1971). The visual effects at different distances are shown in the Figure 26 below (Jan Gehl, 1971, p70). Therefore, a tranquil garden is more effective at a scale of fewer than 50 meters. In addition, the most comfortable social distance between people within the garden, that is, the distance at which people interact with each other daily is between 1.3 and 3.75 m. The communal distances beyond 3.75 m are for one-way communication gatherings or distances at which people are only willing to observe and not participate (Hall, The Hidden Dimension.).

View Boundary and Scale

Figure 23:
Viewshed

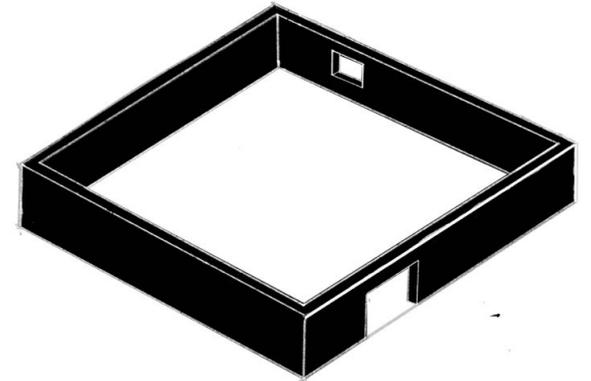
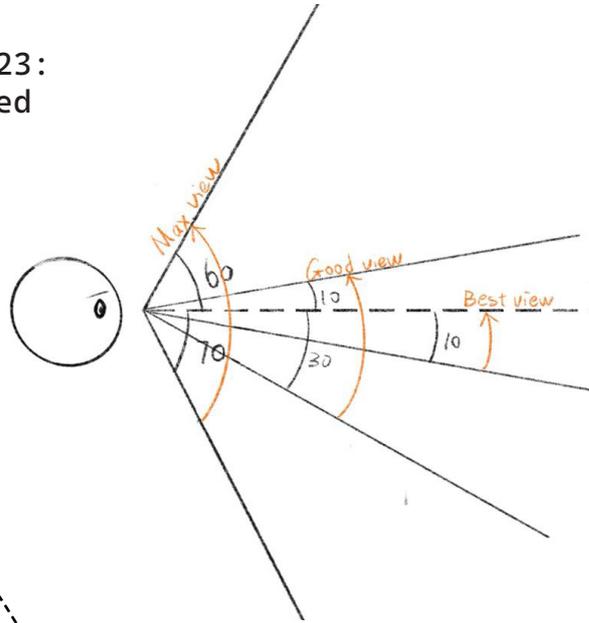


Figure 23: Typical
wall

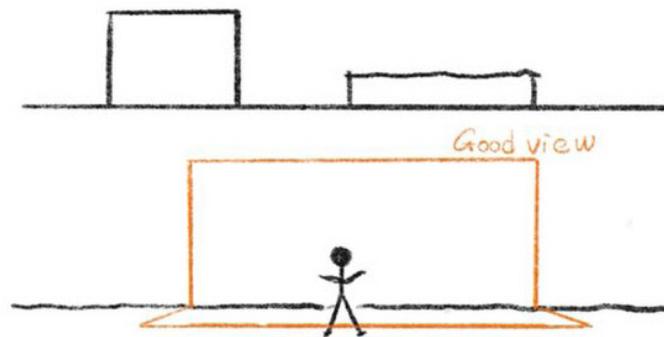
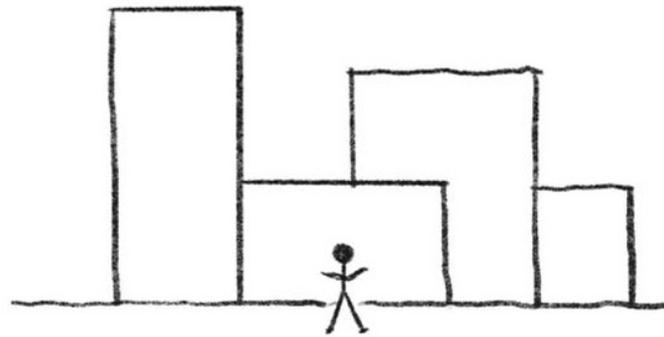


Figure 24: Boundary

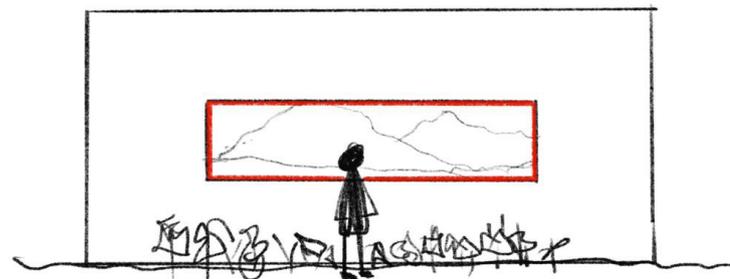


Figure 25: Window

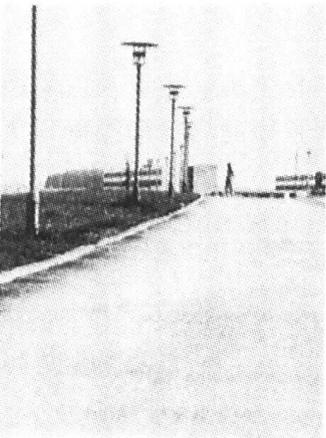
Figure 26: Distance and visual²³



80m



7.5m



35

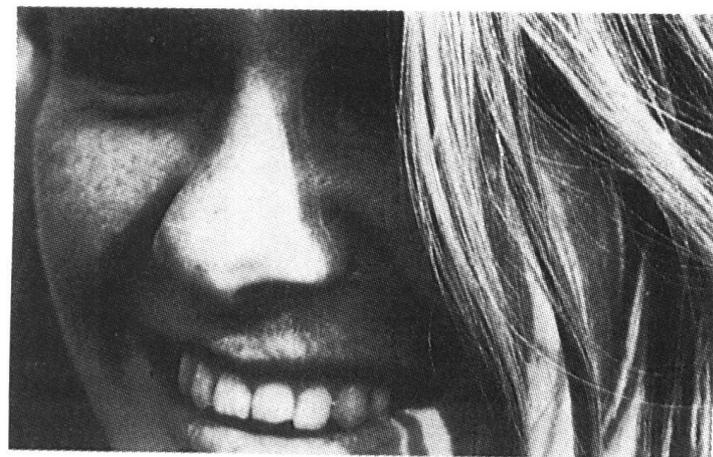
50m



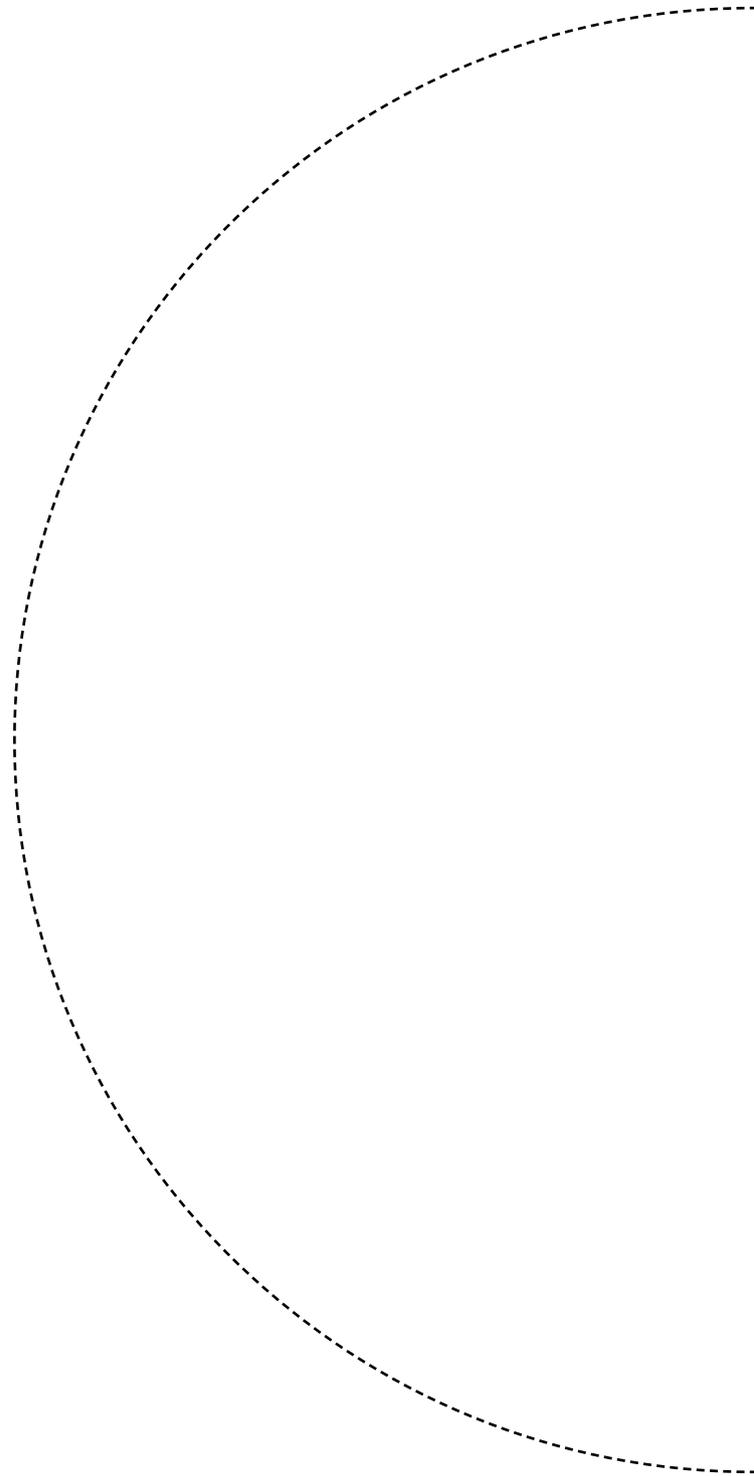
2m



20m



40cm



Repetition

The previous chapter mentioned that religion offers three principles of tranquillity: repetition, symbolism, and non-functional behavior. The monks had a set schedule of rising, praying, studying, and working; as a rule, this routine was maintained for a long time. The counterpart to this

is the cloister in the monastery, an architectural form representing eternal time and infinite repetition. A circle of fences usually surrounds the garden where the monks walk and reflect. The regular windows and repetitive elements on the way to the circular corridor reinforce this sense of repetition. The guiding and setting up of a circular flow in the garden of tranquillity is thus an act similar to the setting up of programmed tasks in religion, used to calm people during their walk.

Symbol

The center of a monastic garden is usually divided by a cross with a fountain in the very middle, a form of Persian origin.

The four paths symbolize the river, and the water symbolizes life and birth.

As religion became more common during the middle age, gardens became places of prayer, meditation, and worship, with myths and legends and various symbols projected on actual buildings to make the space more solemn and atmospheric.

Nevertheless, gardens are, by nature, utopias created by people in the real world. Those who have faith see gardens

as gardens of Eden and the atrium as a medium of communication with God; those without

faith can also find the abstract beauty of order in religious gardens and see the pure sky between the layers of buildings.

Material

A single building material, such as stone, is used in most religious buildings. The thick stone walls embody the silence and low echoes as the monks move slowly through

the long corridors from one task to the next. Stone is a perfect material for religious architecture, sounding three-dimensional while managing the form of each element and space systematically during the construction process. Thus in the Tranquillity Garden, rammed earth, concrete, stone, and other simple materials allow the individual to focus on the interior. At the same time, the rough surface creates an essential connection with the natural space within the patio. In Peter Zumthor's Serpentine Gallery Pavilion (2011), for example, he uses a similar feel by covering the wooden material with muslin and painting it black.

Site in the city

In order to control the number of people inside and create a suitable atmosphere, it is essential to hide the space in the urban environment, making it difficult to reach, creating a contrast between the two spaces on the one hand, and controlling the flow of people entering on the other.

37 In the traditional medieval cities of Europe, the pedestrian street controlled the city's structure, with various activities intertwined in a very dense line. Suppose activity is to be encouraged in the city streets and not dispersed. In that case, large spaces are hidden behind small, lively units (Jan Gehl, 1971), so crowds gather in the small unit areas and maintain the area's activity. If the tranquillity garden replaces this ample space, it maintains the area's activity while controlling the flow of people into the tranquillity garden. In addition, concentration or dispersion through height differences is also possible; Jan Gehl argues that activities occurring on the same plane can be experienced within perceptual limits. Conversely, participation and interaction are more psychologically and physically challenging if the activity occurs at a slightly higher level or within an open space.

Symbol

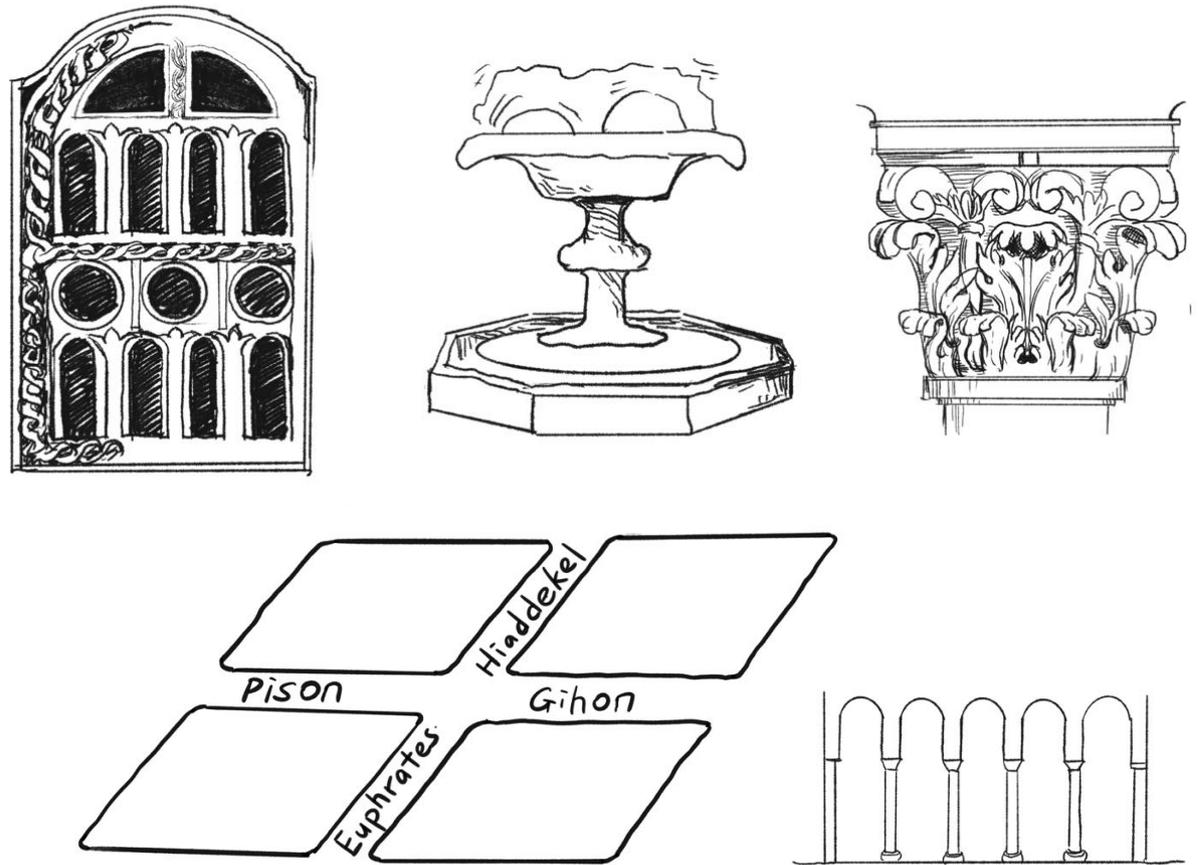
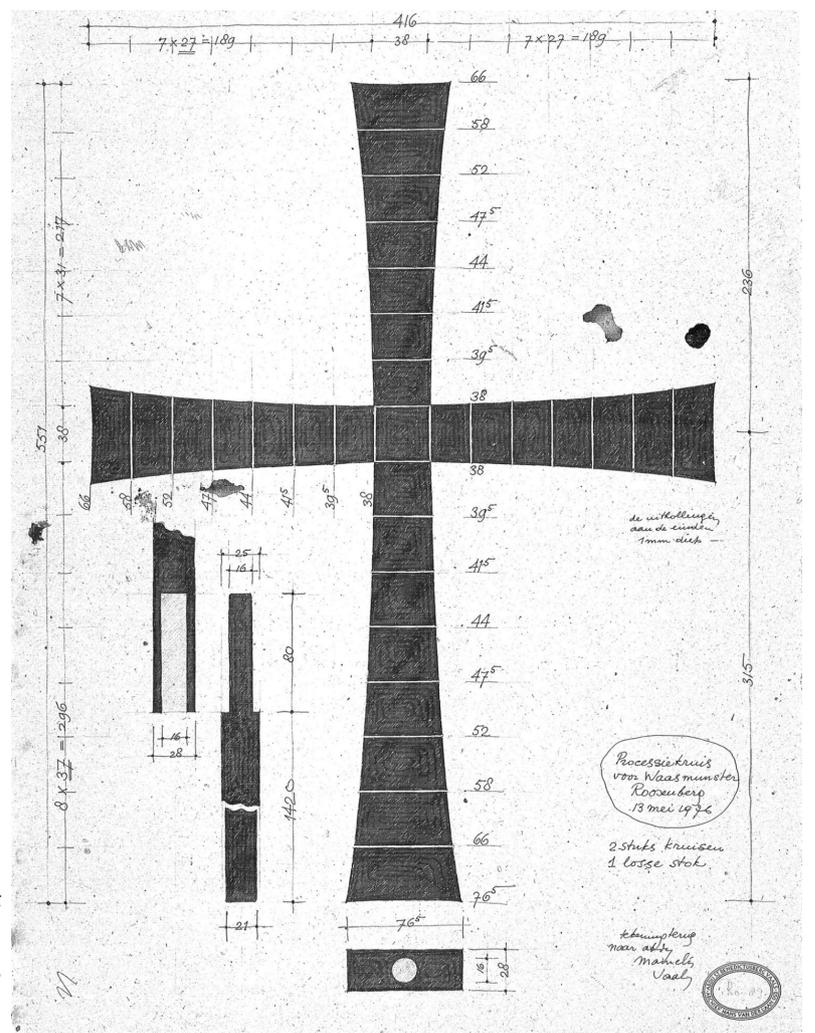
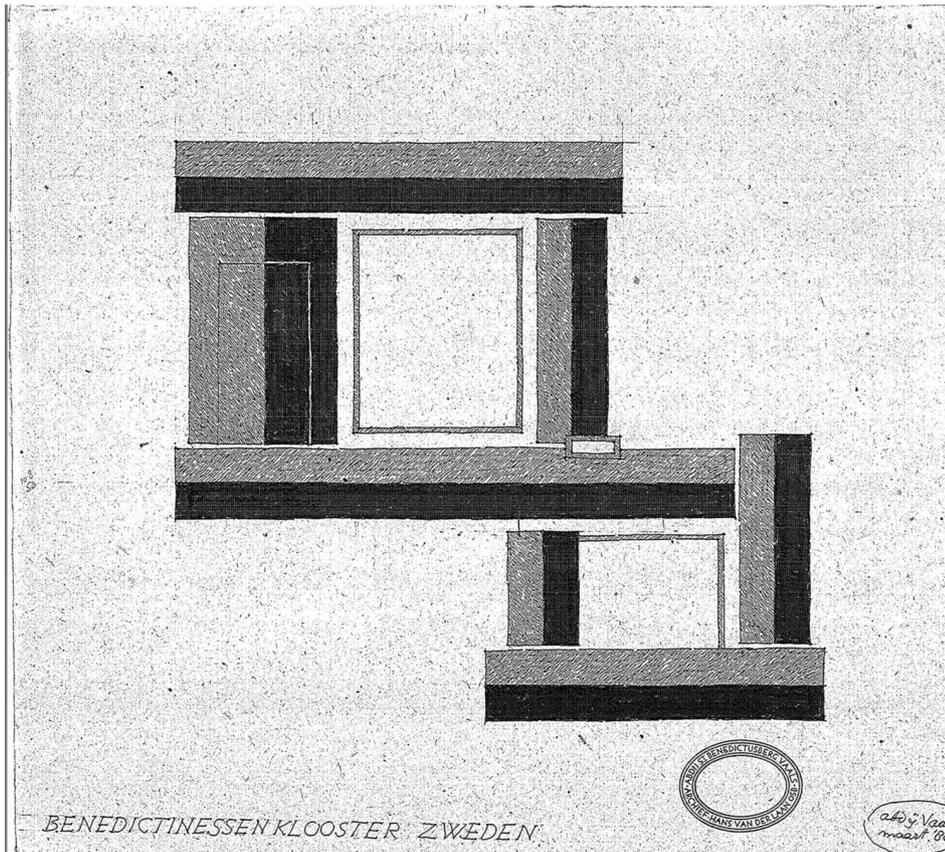


Figure 27: Hans van der Laan and his Cross¹²

Throughout his life, Dom Hans Van der Laan designed several crosses. With its four measures, the cross embodies the foundations of plastic number: its proportional continuity. In this project, the proportions of the various parts of the cross are 3:4, 3:7 and 4:7.





Repetition

'As one moves through those spaces again and again, they start to sound together like a spatial melody. The simpler your house is furnished and decorated, the more clearly those basic motifs will be experienced.'

--Hans van der Laan

Figure 28: Mariavall Abdijs in Zweden,²⁵

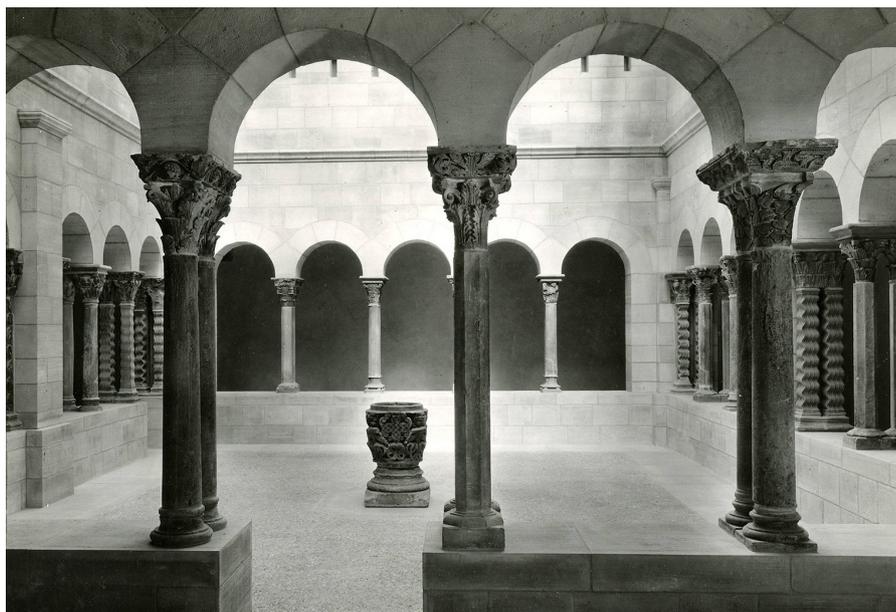
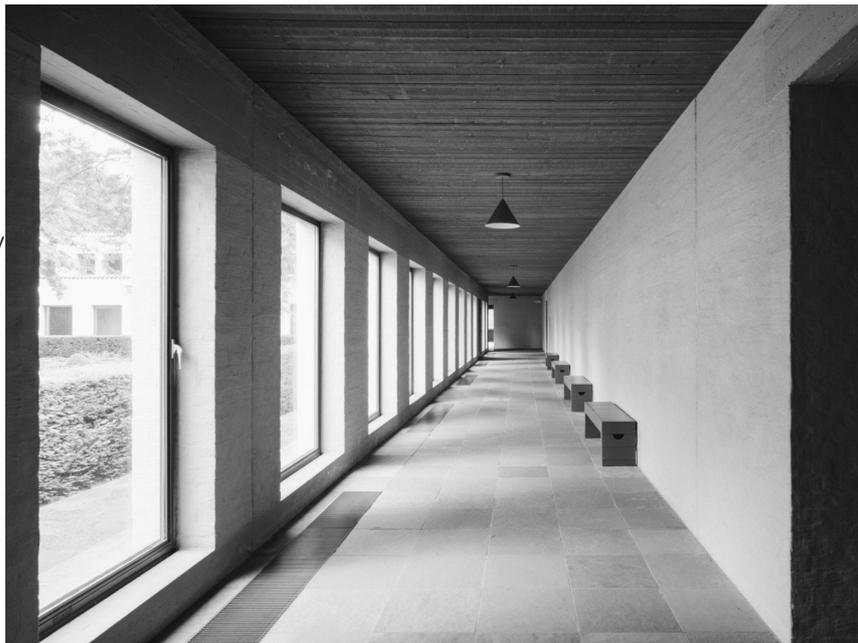
Hans van der Laan

Mariavall Abdijs is a Swedish monastery, the church and nunnery part of which was completed in 1991. The general arrangement is a cross-shaped plan, with the convent organised around two courtyards, forming a figure-of-eight flow.

Figure 29:
A Belgian
monastery,²⁶
Hans van der
Laan

39

The shape of the space is in harmony with the shape of the windows.



Material

Figure 30: The Met Cloister²⁴

It combines pieces of medieval monasteries, churches and churches purchased and transported from France and Spain. The stone columns or arches from different places are very harmoniously combined.

EPHEMERAL AND SUBJECTIVE

Separating spatial understanding from visual, auditory, and olfactory experiences is impossible. Nonetheless, sound and scent are central to most garden visitors' enjoyment. This section focuses on how something as ephemeral and subjective as sound and scent can be discussed in a garden building to provide a sense of tranquillity.

Sound

Sound is a pressure wave, and when an object vibrates, it causes the medium to vibrate in the same way, so in simple terms, the sound starts at the source and is gradually dissipated outwards until it disappears. (Figure 31a) Therefore, the higher the floor, the quieter it is, but the ground floor has a more significant loss of sound due to the shading of the surrounding buildings and vegetation (Benocci, R., A. Bisceglie, F. Angelini, and G. Zambon. 2020). Given the public nature of the tranquillity garden but the need to provide sufficient security and privacy for those inside, the location of the tranquillity garden can be appropriately elevated to achieve a relatively low noise environment, depending on the surrounding vegetation and the average building height in the city. (Figure 32)

In addition, the enclosed structure of the garden, as opposed to an open environment, can block some of the external noise. (Figure 31b)

As it is perceived, the acoustic environment is defined as a 'Soundscape' ([ISO], 2014). In a project to collect subjectively perceived tranquil places in London via Instagram and some apps (Water et al. 2021), they found that the main characteristic of most tranquil spaces is the presence of nature rather than the absence of noise. Some

of the 'Tranquility' spaces were even exposed to what would generally be considered high average area noise but were quieter than the surrounding area, such as the side streets next to the main road. Therefore, 'relative tranquility' is the more straightforward condition for creating tranquil spaces within urban spaces than 'absolute tranquility.'

Acoustic engineers distinguish between 'wet' and 'dry' spaces based on whether the sound is maintained or escapes within the space (Elizabeth Fowler, 2017).¹ A 'wet' space has a smooth, moist, concave surface that sustains and reflects sound. A 'dry' space has a rough, dry, raised surface that absorbs and loses sound. In the monastery, therefore, the sky has zero reflectivity, the plants and land absorb sound, and the stones reflect it. The walls, floor, and roof of the corridor surrounding the monastery are all stone, while the central part facing the sky is open. The sounds of birdsong, water, and leaves produced in the garden in the middle are captured by the corridor as they reach the edge of the garden and are reflected throughout the cloister. In the event of rain, the waterlogged middle part of the garden creates a 'wet' space in the vertical direction, capturing sounds, such as thunder, rain, etc., from above and transmitting them to the corridor.

41

Natural sounds are not noise, because they reinforce the primordial causality and potential tranquillity of nature. (Juhani Pallasmaa, 2015) Like birdsong and the sound of water flowing, such faint sounds are also conducive to creating a peaceful space, as will be discussed through water flow design in Chinese gardens. From the 4th century AD onwards, Chinese gardens used sound as part of their aesthetics. (Mengxue Ao, 2020) People played musical instruments in the gardens, and Chinese instruments

¹ Elizabeth Fowler, 2017, "Audio Delay: the Hortus Conclusus and Body Technique"

gradually shifted from ornate sounds to imitating the sounds of nature to express emotions and become quieter and quieter. In turn, two different atmospheres arose in Chinese gardens: one included grand buildings and water ponds in which people indulged themselves with the sound of silk and bamboo. The other has a more natural and straightforward sound composition, consisting of soft music such as Xiao flowing together with the sound of water flowing. This concept of sound complementing the landscape is similar to modern soundscape design.

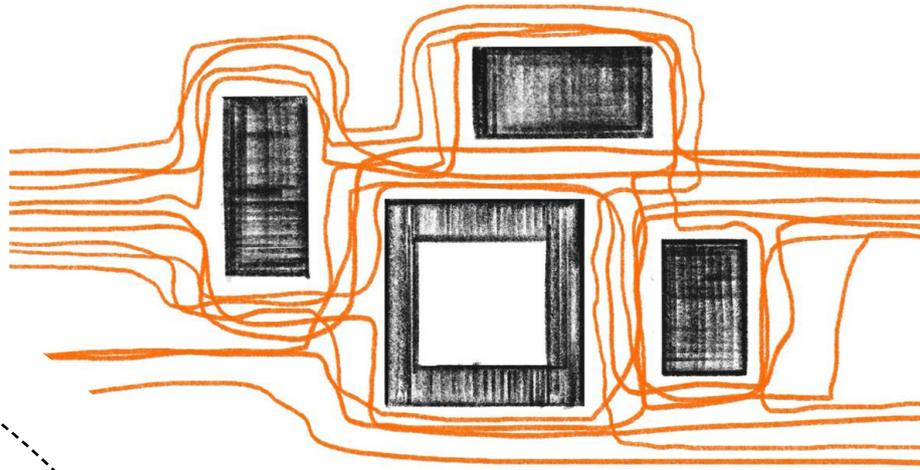
During the Qianlong period, the emperor ordered the construction of QinYun Zhai. (Yu Zhang, 2017) Although the name has Qin in it, there is no space in the garden's design for artificial music playing. The designers lent sound to the landscape through the stream, using the body of water as the string and the stones at the water's edge as the instrument's body. In winter, the water freezes over but still flows at its source, creating the sound of water and ice. The sound of water is subtle and distant, as most naturally occurring sounds are intermittent and irregular, present at times and sometimes not even felt, with the result that people instead pay attention and listen to it. Humans do not care about the sounds around them in a noisy environment; the silence makes them listen.



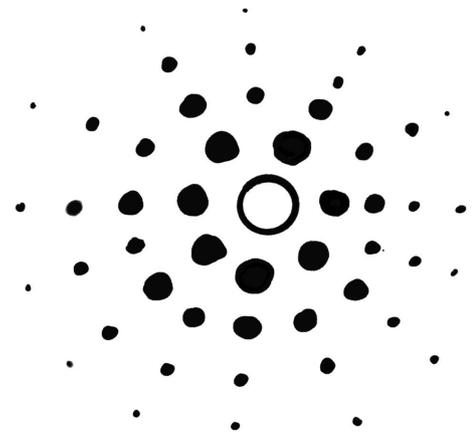
Figure 34: Hugh Livingston, The String Quartet and 22 Intermissions (Please Be Seated), 2015²⁸
(Livingstonsound, 2017)

43

These acoustic chairs radiate sound through the sitter's spine, connecting the audience to the tactile sensation of the cello plucking. Different chairs have different resonances. When listeners shared their feelings, there were many references to the sound of the painting and the feeling of the garden gradually calming down.



(b) Form 2



(a) Form 1

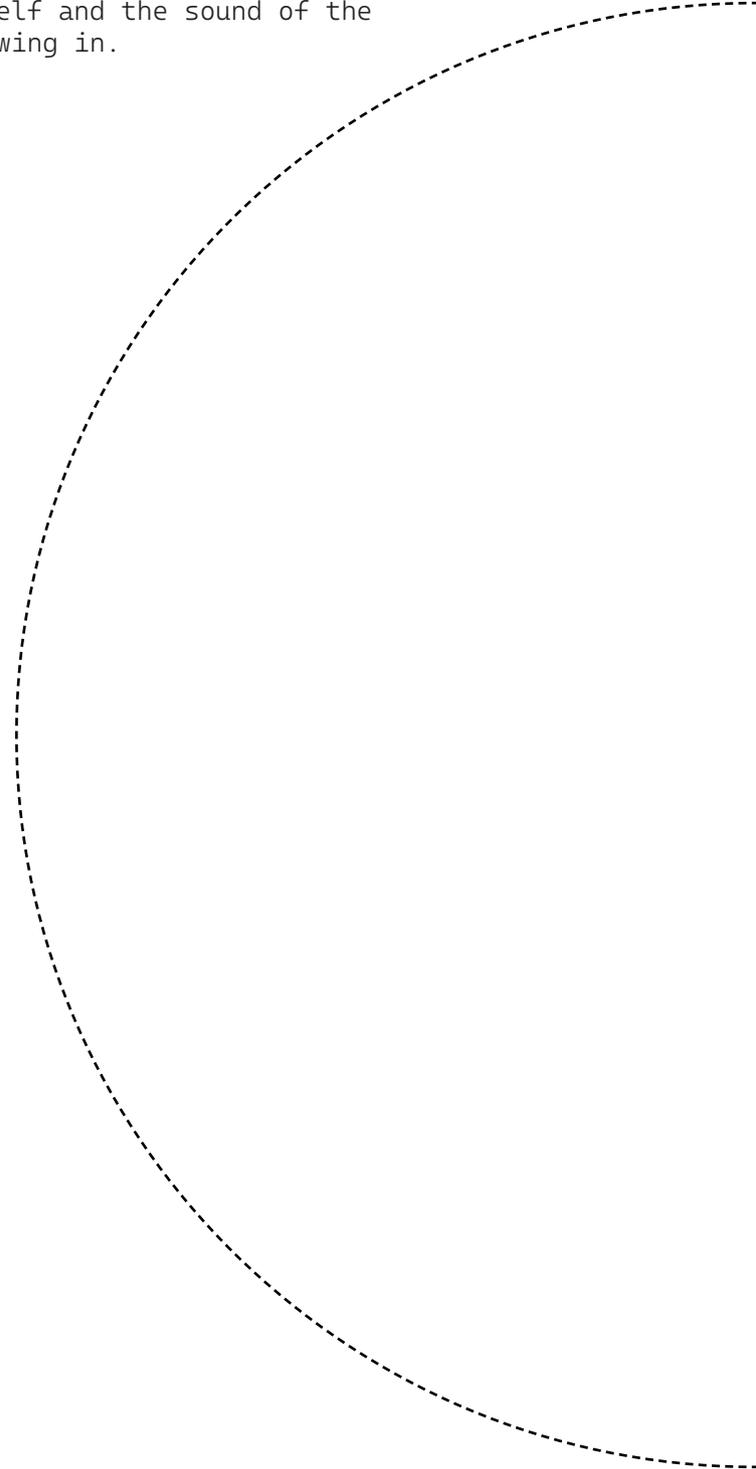
Figure 31: Acoustic forms



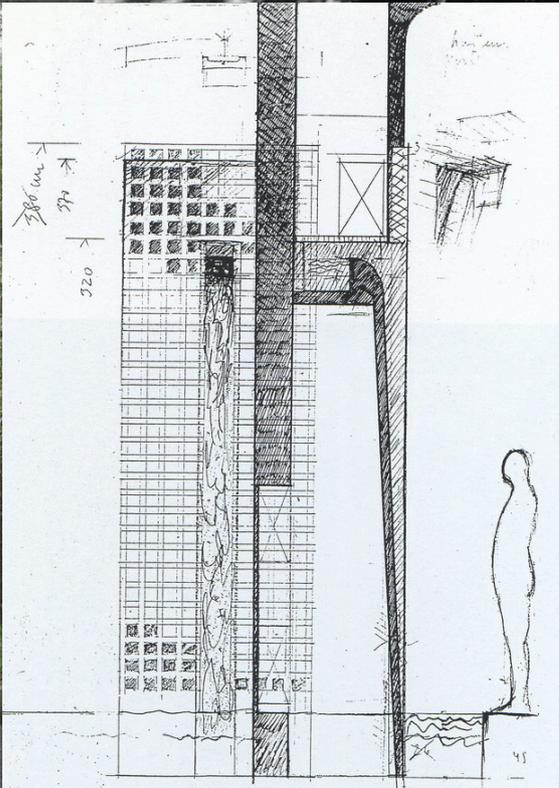
Figure 32: Raised garden to attenuate surrounding noise levels

Figure 33: 'Le Cylindre Sonore',
Bernhard Leitner
(Archidaily, 2011)²⁷

Bernhard Leitner has built a recessed sound space in a bamboo forest. It consolidates the sound through the speakers inside the wall, and the tension brought about by the form of the ring itself. Enclosed space, but connected to the open sky, within which one can hear oneself and the sound of the stream flowing in.



45



Scent

The scent is mainly related to distance; as we move away from it, we gradually lose the smell and vice. The sense of smell can only perceive different smells at a limited range. At a distance of less

than 1 meter, people can smell weaker smells emanating from the skin and clothing of the other person's head. Stronger smells, such as perfume, can be sensed 2-3 meters from each other.

Beyond 3 meters, humans can only smell extreme odors. At the

same time, we register scent differently in enclosed

or open spaces. Words about scent are rare and difficult to describe.

Aside from stating that the flowers are fragrant, what can be said about describing the unique scent?

46

As poets in the past, we used words to describe subjective sensations and how people experienced them, such as the song of birds, flowers, water running and leaves rubbing together. Poetry praised the scents, sounds, and sensations of gardens. However, this transmission of sensory information is gradually disappearing.

POETRY

Carnations if you look close have their tongue-shaped petals powered with
spankled red glister,
which no doubt gives them their brilliancy:
sharp chip shadows of one petal on another:
the noched edge curls up and so is darked,
which gives them graceful precision.

6 July,1866 Gerard Manley Hopkins

The bluebells in your hand baffle you
with their inscape,made to every
sense: if you draw your fingers
throughn them, they are lodged
and struggle/with a shock of wet
hands;the longs stalks rub and
click and flatten to a fan ...

9 May,1871 Gerard Manley Hopkins

47

They silently inhale
the clover-scented gale,
And the vapors that arise
From the well-watered and
smoking soil

The Garden by Moonlight, Amy Lowell

As I listened from a beach-chair
in the shade
To all the noises that my garden made,
It seemed to me only proper that words
Should be withheld from vegetables and birds.

A robin with no Christian name ran through
The Robin-Anthem which was all it knew,
And rustling flowers for some third party waited
To say which pairs, if any, should get mated.

Not one of them was capable of lying,
There was not one which knew that it was dying
Or could have with a rhythm or a rhyme
Assumed responsibility for time.

Their Lonely Betters, 1950, Wystan Hugh Auden

A black cat among roses,
Phlox, lilac-misted under a first-quarter moon,
The sweet smells of heliotrope and night-scented stock.
The garden is very still,
It is dazed with moonlight,
Contented with perfume,
Dreaming the opium dreams of its folded poppies.

Rain in Summer,H.W. Longfellow

There were three ladies in the same garden
for whom like incense
the final blanz of the sun was smoking so much
that almost all that could be seen in that
glory were their dresses

And the first iris to the new iris
as if it had been given
a bell cleft in the blue sky

as if i were offering
sky to be breathed in

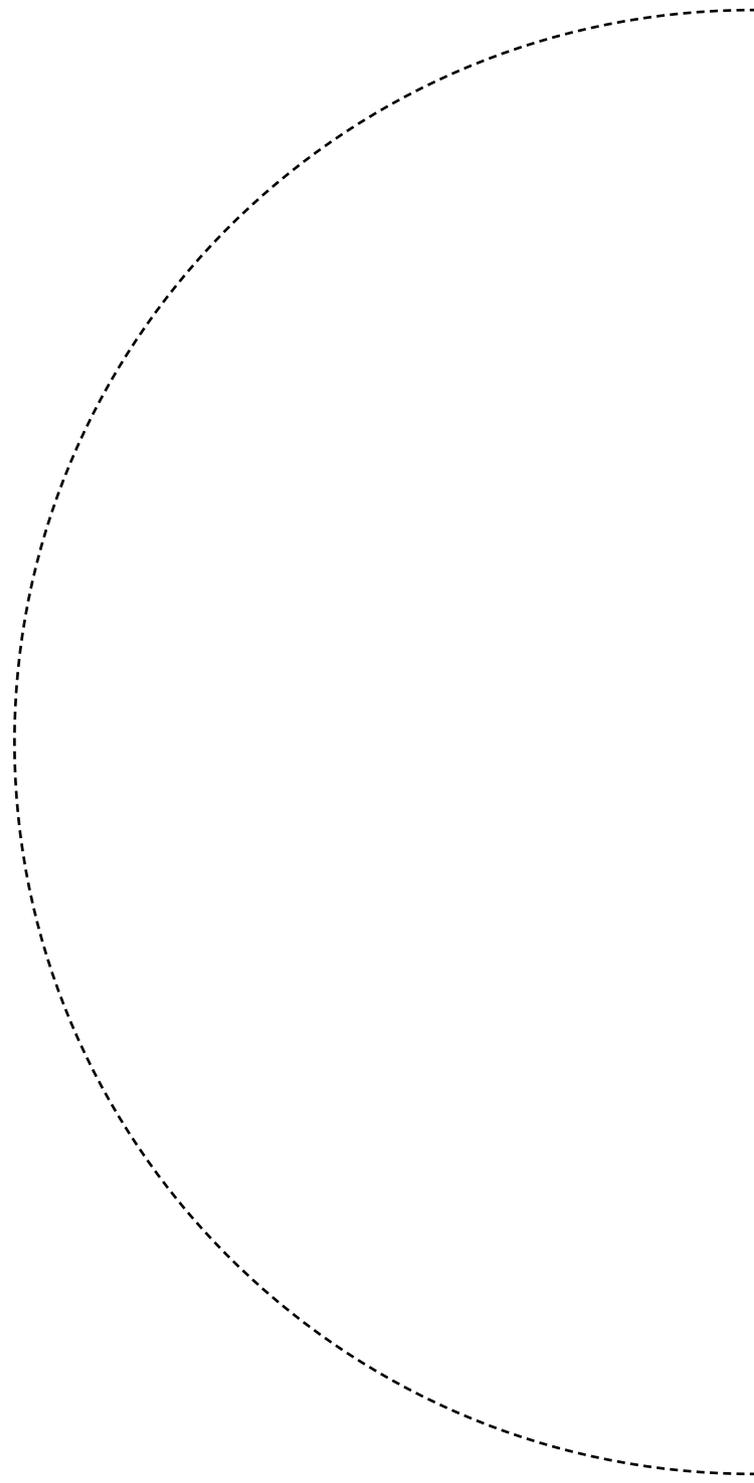
April,1984,Philippe Jaccottet

48

All night have the roses heard
The flute, violin, bassoon;
All night
has the casement jessamine stirr'd
To the dancers dancing in tune;
Till silence fell with the waking bird,
And a hush with the setting moon.

The slender acacia would not shake
One long milk-bloom on the tree;
The white lake-blossom fell into the lake
As the pimpernel doz'd on the lea;
But the rose was awake all night for your sake,
Knowing your promise to me;
The lilies and roses were all awake,
They sigh'd for the dawn and thee.

Come into the Garden, Maud
Alfred Tennyson, 1st Baron



Plants

Among the elements that create a tranquil space, it has never been denied that natural elements are the most crucial part of creating a tranquil space (Watts. 2017). From the 16th century onwards, flowers, as a newly popular and essential element in formal gardens, provided a sensory experience. Flowers provided a visual and tactile experience through their color and shape and an olfactory experience through the scent they emitted. (Figure 36)

17th-century Versailles procured fragrant flowers such as tuberose, jasmine, hyacinths, oranges (the scent of orange blossom is lovely), roses, and carnations. In some of the historical texts describing the Islamic gardens, the plants in the gardens were more oriented towards sensory experience than cultivation needs. Many fruits and flowers contribute to the garden's fragrance, such as cherries, peaches, almonds, roses, lilies, violets, jasmine, and daffodils. Plants with a cooling effect, such as sandalwood and camphor, were also used as popular garden plants at the time as a doctor's recommendation.

In contemporary tranquil spaces, where plants are also used as part of the design, flowers are considered first and foremost for their fragrance. There are fragrant flowers such as pandan leaves, Rajawadee, Gardenia, day-blooming Cestrum, or even Ellwood's Gold are used to Most gardens, in addition to the scent of the flowers, ensure a different sensory experience all year round by placing plants that open in different seasons together. The flowers' shape, structure, and texture are also considered; for example, carnations with jagged edges and honeysuckle shaped like birds. Some plants also create tiny sounds, and their flowers attract insects or birds, such as Arachnothryx Leucophylla, pink and white Ruellia tuberosa, Verbena,

Philadelphus coronarius, Ash bush, or Purple sage. Flowers in the archives. There are also tranquil places that create a pure atmosphere by using a single plant, such as the lotus and koi in The Brion Tomb and Sanctuary (Carlo Scarpa, 1978)(Figure 39) and the pine trees transplanted from the suburbs in the Bibliothèque Nationale de France. (Figure 40)

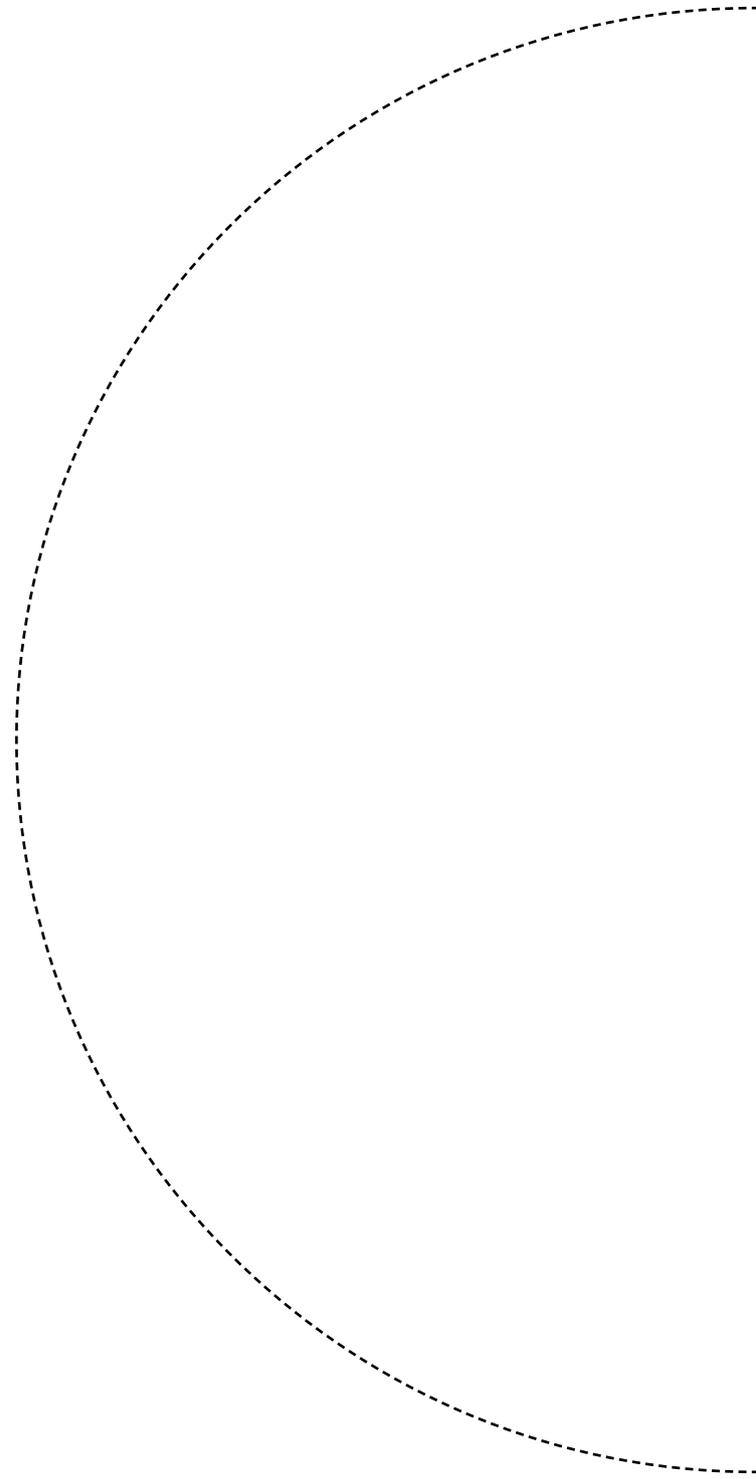


Figure 35: Trees By Man
 ,Michael Amery²⁹
 Charcoal on paper. 1800
 x 1250 mm

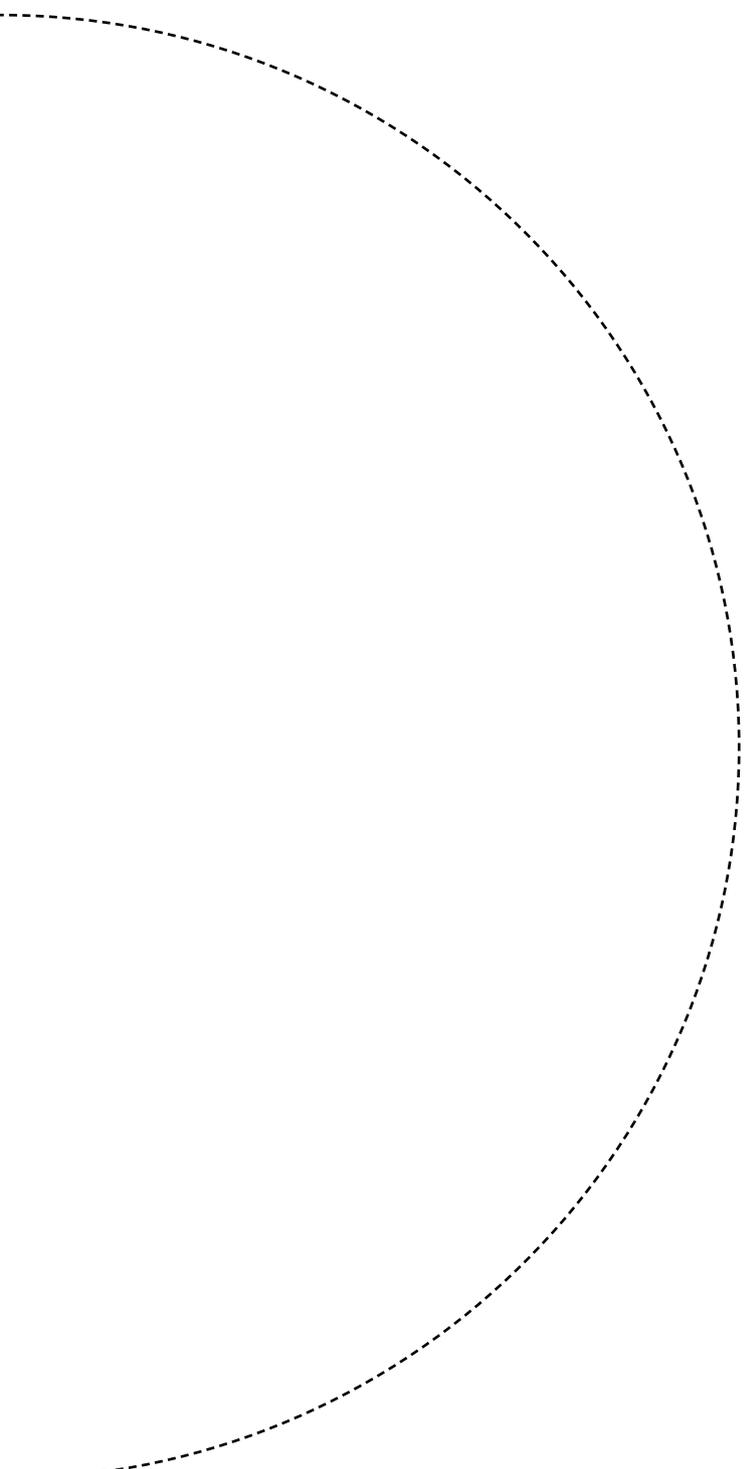
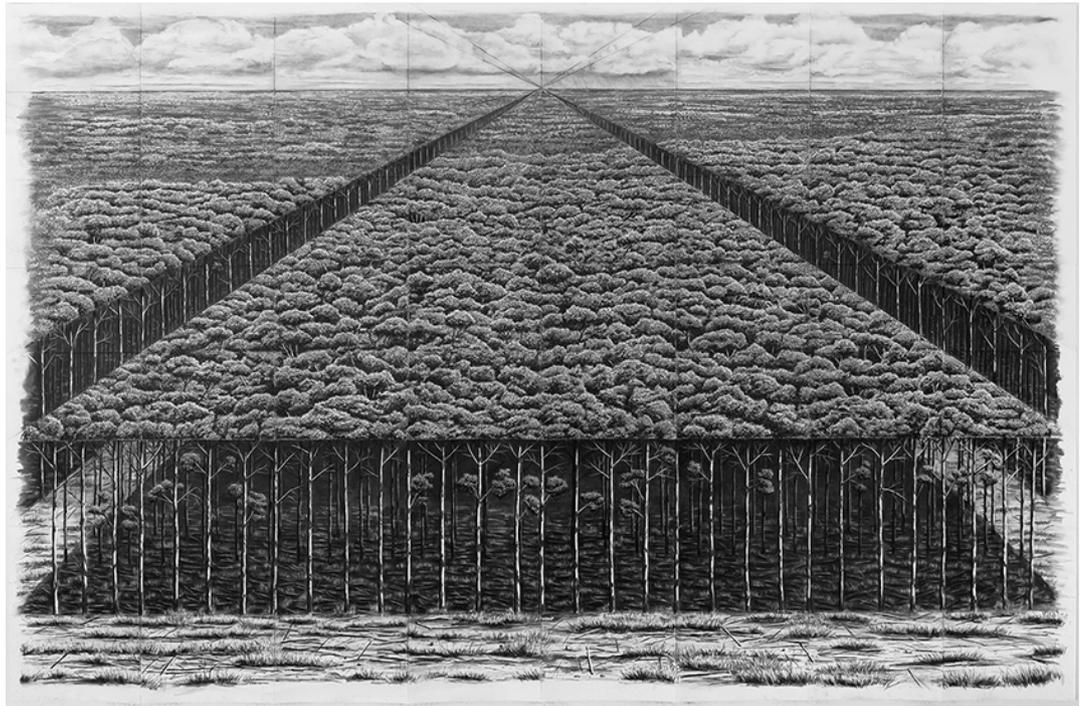


Figure 36: Title page of John Parkinson's *Paradisi in sole, Paradisus Terrestris*³⁰



Figure 37: Serpentine Gallery Pavilion, Peter Zumthor, 2011, Photograph by Julien Lanoo (Dezeen, 2016)¹³

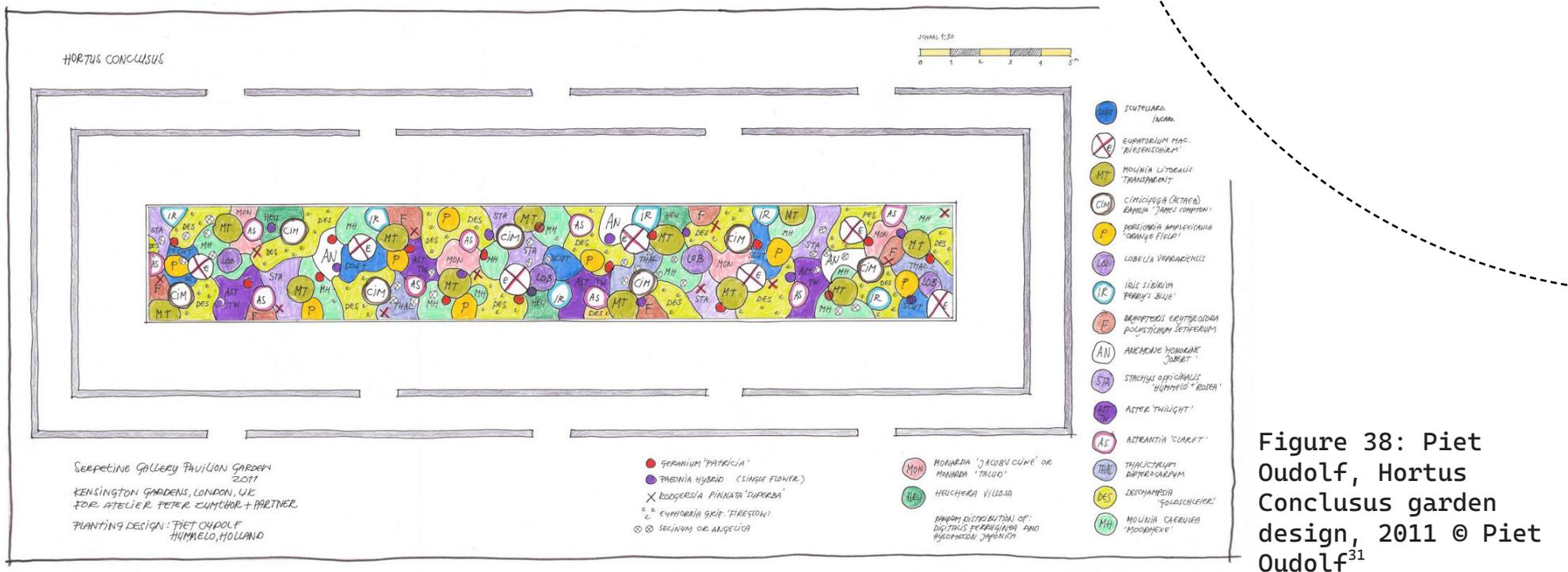


Figure 38: Piet Oudolf, Hortus Conclusus garden design, 2011 © Piet Oudolf³¹

Figure 39: The Brion Tomband Sanctuary, Carlo Scarpa, 1978³²
(Divisare, 2021)

Flat group:
The combination of lotus and carp with a Japanese maple tree is reminiscent of the Japanese culture of wabi-sabi.



High Group:
Wild-growing pine trees transplanted from the suburbs.

Figure 40: National Library of France
(Archidailiy, 2011)³³

This conjectural section drawing helps to better depict the colour and smell of the features described in Thomas Whately's Observations on Modern Gardening (1770). As a form of hedge or woodland edge, this plantation with shrubs attracted songbirds like the chaffinch, as it still does today in Painshil's replanted serpentine shrubbery.

54



Figure 41: Mark Larid, Reconstruction of a Plantation around the Fields of a Ferme Ornee, 1998³⁴



Mark Larid, Reconstruction of a Plantation around the Fields of a Ferme Ornee, 1998³⁴

Figure 42: *Lonicera interrupta*³⁵

The flowers in this species are showy and bright, although sometimes variable in shape, when reflexed the petals are quite interesting, and the strong lip is a good indicator for this species



Figure 43: *Spartium junceum*

An excellent landscape plant. In late spring and summer shoots are covered in profuse fragrant yellow pea-like flowers 1 to 2 cm across. In late summer, the legumes (seed pods) mature black and reach 8–10 cm (3–4 in) long. They burst open, often with an audible crack, spreading seed from the parent plant.



56



Figure 44: Arachnothryx leucophylla



Figure 45: Ruellia tuberosa

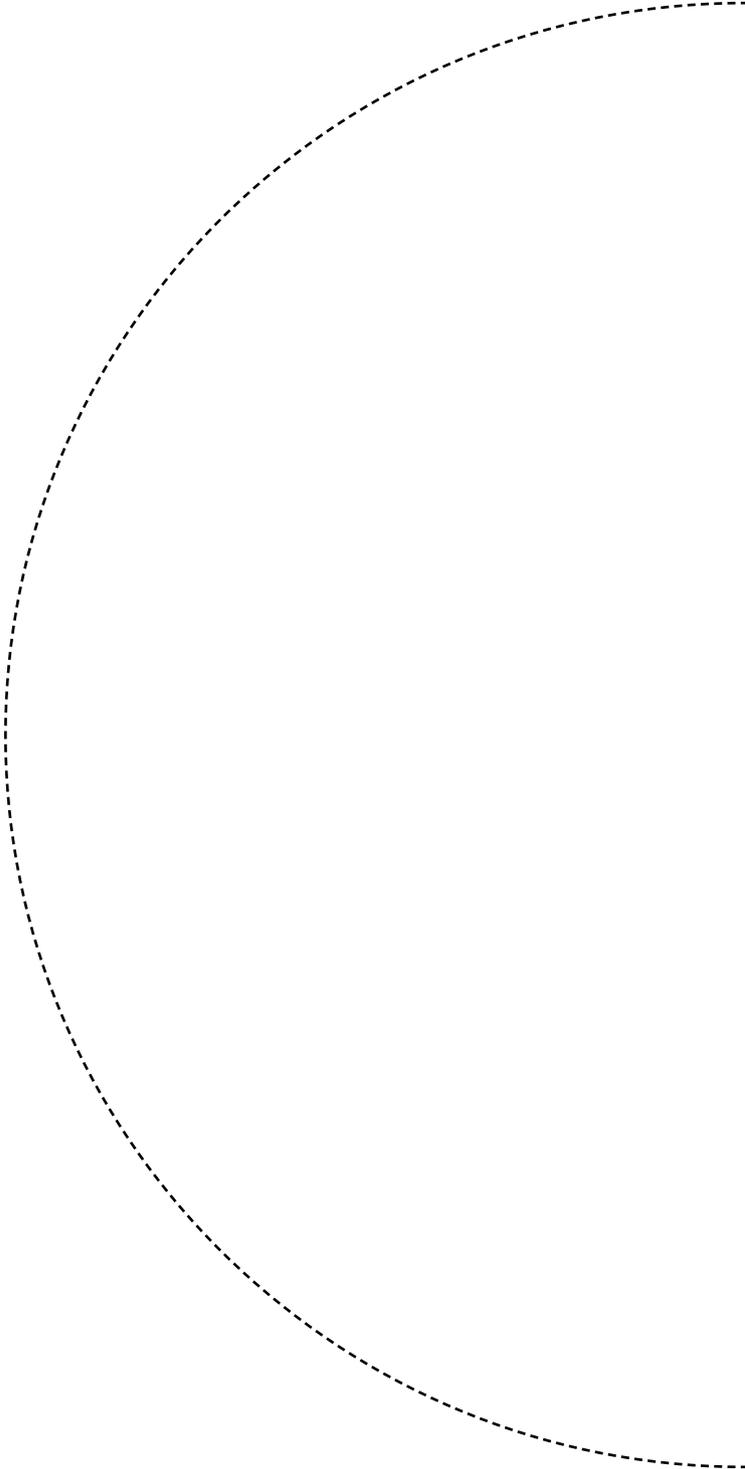


Figure 46: *Verbena incompta*

The Morton Arboretum
Perennial herb 20 cm - 1.2
m tall
Deep blue or purple flowers
Flowering: mid-June to
late September



57



Figure 47: *Syringa vulgaris*

Shrub or small tree 2.5
- 7 m tall
borne in a 10 - 20
cm long, branched
inflorescence, lilac,
about 1 cm long,
tubular, four-lobed,
very fragrant
Flowering: May

58

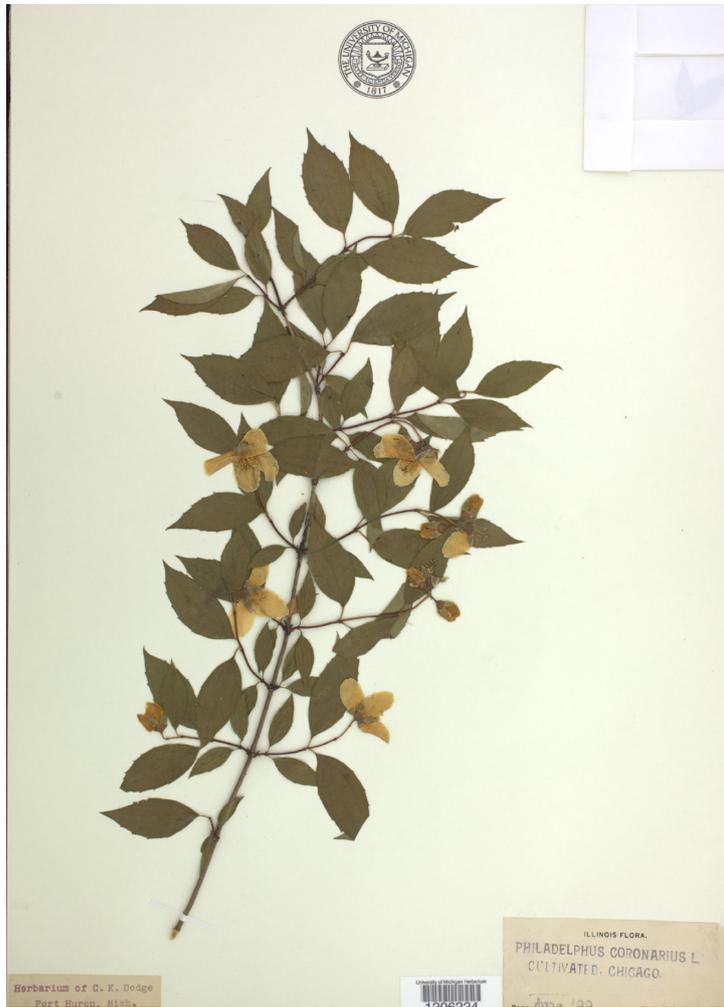


Figure 48: *Philadelphus coronarius*

Shrub to 4 m tall
very fragrant, 2.5 - 3.5 cm across, with four
sepals, four large white petals, and many
stamens

Flowering: June to July

Figure 49: *Sarracenia leucophylla*

forming dense clumps;
rhizomes 1-2.5 cm
Flowers slightly
fragrant, petals maroon to
red and white
Flowering: Mar to Apr





Figure 50:
Lagerstroemia indica

Flower: from deep
purple to red to
white
With ruffled petals
and a crêpe paper-
like texture
Flowering:
Summer, autumn

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Figure 51: *Salvia leucophylla*

Plants 90–120mm,
Flower: rose-lavender



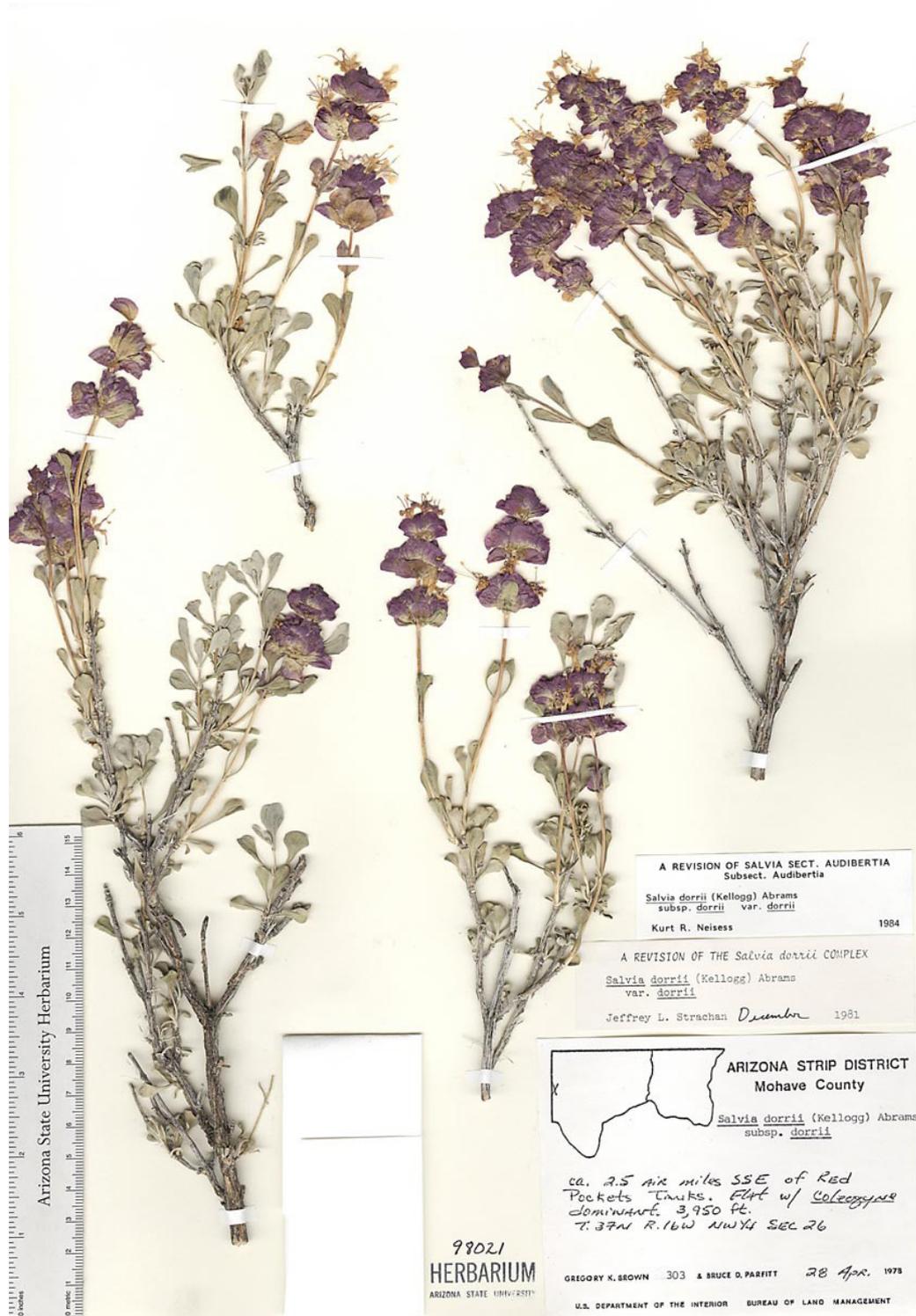


Figure 52: *Salvia dorrii*

Plants 10–70cm,

The grey-green leaves are narrow and lanceolate

They have an intense but pleasant, mildly intoxicating minty aroma, with the scent released when the foliage is handled or crushed

Flower: blue, purple, rose



Figure 53: Taraxacum

Plants 1-5 cm
Flowering: Summer

Figure 54: Gardenia

The flowers are solitary or in small clusters, white, or pale yellow. Flowering is from about mid-spring to mid-summer, and many species are strongly scented.





Figure 55: *Cestrum diurnum*

flowers have a modest sweet fragrance, a chocolate scent – nothing like the intoxicating aroma of *C. nocturnum*, but pleasant.

It is lightly scented during the day and releases a strong fragrance in the evening.

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Figure 56: *Camphora officinarum*

The leaves have a glossy, waxy appearance and smell of camphor when crushed. In spring, it produces bright green foliage with masses of small white flowers.



CONCLUSION

Tranquillity is a concept that encompasses several aspects, such as the environment, the senses, architectural space, and society. In contemporary cities, it is difficult for people to stop and think and reorient themselves due to social pressures and the increasing noise and visual overload in the city. The existing quiet spaces in the city are insufficient as spaces of tranquillity to guide people to think, so creating such spaces in the city is necessary.

In this paper, the diagram of the 'Tranquil Space' project is to create a public space where people can enter and feel not only physically quiet and relaxed but also psychologically relieved. In short, a 'Hortus congress' and 'contemplative garden' in contemporary society. I have made some models to represent it.

63

The article begins with 'Hortus conclusus', which tells how the enclosed garden is a vehicle for a tranquil space. In particular, how religion was used to influence the character of the space in medieval monasteries.

The next chapter discusses whether the abstract concept of 'tranquillity' can be made concrete. Firstly the form of the building enclosing nature is identified as the basis for creating a tranquil space. Then the sensory experiences of sight (i.e., the architectural perspective in the text), hearing, and smell are looked at separately to enhance the human sense of 'tranquillity' in the space. From an architectural perspective, the process of entry, the obscuring of views, scale, siting, and the characteristics and materials drawn from religion are discussed here.

Hearing and smell as subjective and abstract parts of

the garden. The form, soundscape, and reflection of sound are some physical aspects of sound. Scent and sound are connected to the plants inside. In addition, modern society, especially among the younger generation, is becoming less religious (no encouragement of religion is intended here), and the secularisation and modernization of society have led to a gradual loss of the ability to contemplate. Poetry, a vehicle for translating abstract feelings into concrete art forms, depicts a lot about the garden's scents, sounds, etc. It can also be used as a new source to satisfy one's spiritual quest and is enumerated here as a supplement.

64 The 'Tranquillity Garden' project aims at people aged 20-50 who are either under pressure or confused about their lives, such as office workers, university students, or people who aim to find a quiet place. It is not open, relaxing, and suitable for young and old alike, like a park. After all this research, I believe that it is necessary and feasible to build such a 'garden of tranquillity' in the heart of the city in the first place. Most of them are in isolated places, as a complement to the landscape, or as installations. The next question to be addressed is site selection and how to hide such a public space, which needs to provide privacy in the city, or whether to combine it with other functions. In addition, could the Serenity Garden evoke some ritualistic and non-secular acts of people beyond its role as a 'sanctuary' in the contemporary city?

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